Delavai, Jan

From:

Sent: To:

Roark, Jessica Wednesday, May 30, 2001 4:39 PM Delaval, Jan 09/509,283

Subject:

Jan,

Please search, including interference,

SEQ ID NO:2 SEQ ID NO:2 as an oligo search

Results on paper and disk please.

Thanks!

Jessica H. Roark

CM1 9B03 Mailbox 9E12 Art Unit 1644 703 605-1209 THIS PAGE BLANK (USPTO)

. ``

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ched:
                                                                                                                                                                                                                                                                                                                    Pred. No. is the score greater to and is derived
                                                                                                                                                     1067.5
1067.5
1067.5
                                                                                                                                      1067
       723.5
712
695.5
690.5
                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length:
                                                                                                                                                                                                                        Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A_Geneseq_0401:*
1: /SIDS6/gcgdata
2: /SIDS6/gcgdata
3: /SIDS6/gcgdata
                                                                                                                                                                                                                                                                                                                   is the number of results predicted by chance to have a iter than or equal to the score of the result being printed, ived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                               99.0
99.0
99.0
99.0
97.6
67.4
67.1
66.0
64.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    May 30, 2001, 16:49:03; Search time 19.73 Seconds (without alignments) 573.660 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390729 seqs, 57163235 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-509-283-2
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                      SIDS6/gcgdata/geneseq/geneseqp/AA1990_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1990_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1990_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1991_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1992_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1993_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1995_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1995_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1996_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1997_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1999_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA1999_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA2000_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA2001_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA2001_DAT:

/SIDS6/gcgdata/geneseq/geneseqp/AA2001_DAT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS6/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /SIDS6/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1984.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1985.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS6/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1982.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /SIDS6/gcgdata/geneseq/geneseqp/AA1980.DAT:*
                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000000000
                                                                                                                                                                                                                                DΒ
                                                                                                                                                                                                                                H
                                                                                                                                                   W75956
W75957
Y08026
     Y92212
B08723
W75958
W71874
W71875
Y41136
                                                                                                                                      B08731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         summaries
                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    390729
Human cell surface
Human cell surface
Human activated T-
Amino acid sequenc
Human Th2-specific
Murine Th2-specifi
Amino acid sequenc
Mouse cell surface
Rat cell surface p
Rat cell surface p
Rat CD28 protein s
                                                                                                                                                                                                                            Description
```

tarr renden erman	27.04.6	Ė	N H		. 6	ť
	7 2	. L	212		0 Z	4 1
	R31040	1.4	212	ı ~	8 1	ū
CTLA4	W87560	20	211	ı 7	81	2
Human CTLA recepto	W97610	20	187	7.	81	1
Human CTLA recepto	W97615	20	187	7.	81	40
CTLA4 receptor wit	Y41130	20	187	7.	81	39
Human T cell speci	R86945	17	187	7.	81	38
Sequence of mouse	P70445	8	330	7.	81.5	37
Human secreted pro	Y94998	21	209	7.	83	36
Human CTLA-4 prote	Y15129	21	223	7.7	83.5	35
ion pr	R04495	Ľ	229	7.8	84	34
CD28 F	Y41138	20	226	7.8	84.5	ω
Soluble CTLA4 muta	W29728	19	187	7.9	85	32
Soluble human CTLA	W25111	18	223		85.5	<u>ω</u>
Mouse dephosphoryl	Y24322	20	663		86	30
Mouse dephosphoryl	Y24321	20	635	8.0	86	29
Human CD28 gene pr	Y24469	20	117	•	89.5	28
extrac	R67706	16	152	11.1	119.5	27
CD28 for us	W35846	18	134		119.5	26
CD28:	W35862	18	367	11.2	120.5	25
CD28	Y41137	20	223	•	121.5	24
CD28	Y41135	20	225	•	129.5	23
CD28	Y44294	21	220	12.6	136	22
cell	Y96128	21	220	•	136	22
CD28	W88451	20	220	•	136	20
n CD28	W80442	19	220		136	19
Homo	W38413	18	220	٠	.136	18
CD28	R91433	17	220	2	136	17
Human CD28 cDNA pr	W02131	17	220	2	136	16
Sequence encoded b	R27103	13	220		136	15
Human CD28 antigen	R20805	13	220		136	14
t CD28 recepto	227	21	221	13.1	141	13
Feline CD28. Feli	Y32286	21	221		141	12

ALIGNMENTS

RESULT W75956

_

W75956;

W75956 standard; Protein; 199

₿

Human cell surface protein 11-DEC-1998 (first entry)

#1

YER CONTRACTOR OF THE CONTRACT Cell surface molecule expressed in thymocytes and lymphocytes and mediating signal transmission and cell adhesion, and antibodies to $% \left(1\right) =\left\{ 1\right\}$ Human; cell surface protein; thymocyte; lymphocyte; cell adhesion; signal transmission; autoimmune disorder; allergy; diagnosis; mitogen-stimulated. WPI; 1998-481144/41. N-PSDB; V53198. Tamatani T, Tezuka K; 03-SEP-1998. (NISB) JAPAN TOBACCO INC 26-FEB-1998; 27-FEB-1997; 27-FEB-1998; W09838216-A1 Homo sapiens 98JP-0062217 97JP-0062290 98WO-JP00837

```
W75957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence represents a human cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the sequence WMFM in its intracellular region. The cell surface protein can be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
  mediating signal
                Cell surface molecule
                                          N-PSDB;
                                                                                                                                26-FEB-1998;
27-FEB-1997;
                                                                                                                                                                                                                                                                                                                             Human cell surface
                                                                                                                                                                                                                                                                                                                                                       11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                          W75957 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                              Tamatani T,
                                                                                                      (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                      27-FEB-1998;
                                                                                                                                                                                                03-SEP-1998
                                                                                                                                                                                                                         W09838216-A1
                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                         signal transmission;
hitogen-stimulated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          useful
                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                         1998-481144/41.
DB; V53199.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYECNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2; Page 99-101;
                                                                                                                                                                                                                                                                                    cell surface protein; thymocyte; lymphocyte; cell adhesion;
transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in treatment of auto:immune and allergic disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                              Tezuka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                98JP-0062217
97JP-0062290
                                                                                                                                                                      98WO-JP00837
     transmission
                                                                                                                                                                                                                                                                                                                                                                                                          Protein; 199
                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             149pp; Japanese.
              expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1067.5; DB 1
Pred. No. 8.6e-113;
                                                                                                                                                                                                                                                                                                                                                                                                          ð
    ed in thymocytes and and cell adhesion, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
              lymphocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 199;
antibodies to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
```

밁 δÃ В Š 망 δÃ 밁

```
RESULT
Y08026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence represents a human cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the sequence YMFM in its intracellular region. The cell surface protein can be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                                                                                                                                                        anticancer; antiviral; anti-asthma; immunomodulator; proliferation; T cell activation; cytokine synthesis; regulatory element; B cell; T cell-dependent antibody production; treatment; prevention; cancer autoimmune disease; transplant rejection; immune system regulation;
                                                 (DEKO-)
                                                                                          11-MAY-1998;
23-SEP-1997;
                                                                                                                                                                                                                                           disorder; acquired immune
                                                                                                                                                                                                                                                                                                               T-lymphocyte; human;
                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
WPI; 1999-276975/23
                         Kroczek
                                                                                                                                  23-SEP-1998;
                                                                                                                                                             01-APR-1999.
                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                       08-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                          Y08026 standard; Protein; 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         it useful in treatment of auto:immune and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180 MEMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ilcdltktkgsgntvsikslkfchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198;
                                                                                                                                                                                                                                                                                                                                         activated T-lymphocyte protein 8F4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9; Page 101-105; 149pp; Japanese.
                                                   DEUT KOCH INST ROBERT
BUNDESREPUBLIK DEUT PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                          98DE-1021060.
97DE-1041929.
                                                                                                                                  98WO-DE02896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99.0%;
                                                                                                                                                                                                                                                                                                                 8F4; T cell co-stimulation; activated; CD4+;
                                                                                                                                                                                                                                           deficiency syndrome; AIDS;
                                                    PAUL-EHRLICH-INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1067.5; DB 1
Pred. No. 8.6e-113;
                                                                                                                                                                                                                                                                                                                                                                                                                            β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         allergic disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
```

۲.

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and CD8+ T cells but not on resting or activated B cells, granulocytes, monocytes, natural killer or dendritic cells. 8F4 has anticancer, antiviral, anti-asthma and immunomodulatory activity. 8F4 provides a strong co-stimulatory signal for T cell activation, i.e. it amplifies proliferation of T cells, synthesis of certain cytokines and other regulatory agents, and improves T cell-dependent antibody production by B cells. Agents that inhibit 8F4 are used to treat or prevent autoimmune diseases, to prevent transplant rejection and to treat disorders of immune system regulation. 8F4, or cells that express it, is/are used to treat or prevent cancers, acquired immune deficiency syndrome, asthma and chronic infectious diseases (e.g. hepatitis B or C).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and CD8+ T ~~'
                                                                                                                                                                 CRP1; CD28 related protein-1; B7RP1; B7 related protein-1; T-lymphocyte activation; type I transmembrane protein; T cell activation; T cell proliferation; T-cell mediated disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This invention describes a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; X37661
                     Domain
                                          Domain
                                                                Domain
                                                                                       Protein
                                                                                                            Peptide
                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                Amino
                                                                                                                                                                                                                                       02-JAN-2001
                                                                                                                                                                                                                                                                                  B08731 standard; Protein; 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     activated cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Polypeptide 8F4 co-stimulates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y Match
rocal Similarity
ronserv
                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                  mfmravntakksrltdvtl 199
                                                                                                                                                                                                                                                                                                                                                   MEMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                            MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ 60
                                                                                                                                                                                                                acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page
                                                                                                                                                                                                               sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                    /note= "|
162..199
                                         /note= "
141..161
                                                               /note= "
21..140
                                                                                      /note=
21..19
                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            co-stimulates
                                                                                        . 199
                                                                                                                                                                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99.0%;
                                                                                               "signal peptide
                                                                         "mature protein'
                                                                                                                                                                                                               a human
         "intracellular
                                                     "extracellular
                              "predicted transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1067.5;
Pred. No. 8.6e
0; Mismatches
                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T cells
                                                                                                                                                                                                               CRP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human protein,
T cells and is
                                                                                                                                                                                                              polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                     domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5; DB 20;
.6e-113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present on activated B cells, granulocyto
                               domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8F4, and its encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CD4+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

2

DЪ Q

Homo sapiens

δÃ

Qy

```
RESULT
Y92213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 198
                                              CD28; antidiabetic; immunosuppressive; neuroprotective; antipsoriatic; antiasthmatic; antiallergic; anti-viral; CLTA-4; nephrotropic; anti-HIV; antibacterial.
                                                                                                                                    Human Th2-specific polypeptide, h1228.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The polypeptides are useful for treating, preventing ameliorating diagnosing a T-cell mediated disorder in an animal. They can also used to identify test molecules that bind to the polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-FEB-1999;
08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200046240-A2
                                                                                                 h1228; Th2-specific; T helper cell; anti-inflammatory; antiarthritic;
                                                                                                                                                                         10-AUG-2000
                                                                                                                                                                                                                                               Y92213 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               predicted to be a type I transmembrane protein. The nucleic acids are useful for regulating T cell activation or proliferation in an animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein-1) polypeptide. The polypeptides are involved
activation, and represent a receptor-ligand pair. CRPl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Fig 13A; 174pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel nucleic acids encoding the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yoshinaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (AMGE-) AMGEN
                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the treatment,
                                                                                                                                                                                                                                                                                 ر.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       present sequence represents a CRP1 (CD28 related protein-1) \gammapeptide. The specification also describes a B7RP1 (B7 related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000-543476/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                         vtltggylhiyesqlccqlkfwlpigcaafvvvcilgcilicwltkkkysssvhdpngey 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ilcdltktkgsgntvsikslkfchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk 120
                                                                                                                                                                                                                                                                                                                                                                                                                                          VTLTGGYLHIYESQLCCQLKFWLPIGCAAF-VVCILGCILICWLTKKKYSSSVHDPNGEY 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
198; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A64558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000WO-US01871
                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0244448
99US-0264527
                                                                                                                                                                                                                                               Protein; 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ds encoding the proteins CRP-1 and B7RP1 are useful prevention and diagnosis of T cell mediated disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1067.5;
Pred. No. 8.6e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .6e-113;
les 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lved in T-lymphocyte CRP1 and B7RP1 are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 199;
                                                              opthalmalogical;
                                                                                   dermatological;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              be
```

1;

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-OCT-1998;
26-FEB-1999;
06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   human CTLA-4 is encoded by human orthologue h1228.

A novel method for modulating a Th2 response, an immune response, or suppressing airway inflammation or hyperresponsiveness in a mammal comprises administering a Th2-specific polypeptide of the invention, an antibody to such a polypeptide or allelic variants of the genes. The novel DNA and polypeptide sequences are useful for treatment and diagnosis of Th cell and Th cell-like disorders such as Crohn's diseases, arthritis, insulin dependent diabetes, autoimmunity, multiple sclerosis, dermatitis, psoriasis, graft rejection, graft versus host diseases, sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis, viral infections (including human immunodeficiency virus (HIV)), bacterial infections, bronchitis, cystic fibrosis, diptheria, emphysema, pneumonia, and Legionnaires disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T helper (Th) 2 nucleic acids and encoded proteins, useful for diagnosis and treatment of immune and respiratory disorders succepting diseases, arthritis, insulin dependent diabetes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 16; Page 138-139; 159pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200019988-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This Th2-specific polypeptide, which has similarity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; A09056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gehar S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MILL-) MILLENNIUM PHARM INC
                                                                              121
                                                                                                                      121
081
                                       081
                                                                                                                                                           61
                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                    MEMRAVNTAKKSRLTDVTL
                                                                          ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
mfmravntakksrltdvtl
                                                                                                                  VTLTGGYLHIYESQLCCQLKFWLPIGCAAF-VVCILGCILICWLTKKKYSSSVHDPNGEY 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-303619/26
                                                                                                                                                                                                                                                                                                                    197;
                                                                                                                                                                                                                                                                                                                  Similarity 99.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Manning S,
                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0168229.
99US-0258670.
99US-0413136.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label conserve
/note: common
178..181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US23156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label YXXM_motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                     97.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Coyle AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "common in CD28 and CTLA-4; necessary for CD28-mediated phosphatidylinositol 3-kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         conserved_PPP_motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        activity"
                                       , 198
198
                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                  Score 1052; DB 21;
Pred. No. 4.9e-111;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gutierrez-ramos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTLA-4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٦,
                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human CD28
                                                                                                                                                                                                                                                                                                                                                            198;
                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        such
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                    2
```

B Ş B Ş B

Query Match Best Local Similarity

67.4%;

Score 727; Pred. No. 2. Mismatches

DB 21; .9e-74;

Length 200; Indels

2

Gaps

2

Conservative

Sequence

200 AA;

Š ₽ Š

```
A novel method for modulating a Th2 response, an immune response, or suppressing airway inflammation or hyperresponsiveness in a mammal comprises administering a Th2-specific polypeptide of the invention, antibody to such a polypeptide or allelic variants of the genes. The novel DNA and polypeptide sequences are useful for treatment and diagnosis of Th cell and Th cell-like disorders such as Crohn's disease arthritis, insulin dependent diabetes, autoimmunity, multiple scleros dermatitis, psoriasis, graft rejection, graft versus host diseases, sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis, insulin dispondent 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T helper (Th) 2 nucleic acids and encoded proteins, useful for the diagnosis and treatment of immune and respiratory disorders such a Crohn's diseases, arthritis, insulin dependent diabetes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
Peptide
                                         viral infections (including human immunodeficiency virus (HIV)), bacterial infections, bronchitis, cystic fibrosis, diptheria, emphysema, pneumonia, and Legionnaires disease.
                                                                                                                                                                                                                                                                                                                                                 This Th2-specific polypeptide is encoded by a murine orthologue m1288. The protein shares homology with both human and murine CD28 and CTLA-4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CD28; antidiabetic; immunosuppressive; neuroprotective; dermatological; antipsoriatic; antiasthmatic; antiallergic; anti-viral; opthalmalogical;
                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-OCT-1998;
26-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTLA-4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         m1288; Th2-specific;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Murine Th2-specific polypeptide, m1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Y92212 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lehar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200019988-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000-303619/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nephrotropic; anti-HIV; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A09054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Manning S,
                                                                                                                                                                                                                                                                                                                                                                                                                          Page 130-131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0168229.
99US-0258670.
99US-0413136.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US23156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label conserved_PPP_motif
/note common in CD28 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers 114..119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /label… YXXM_motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T helper cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coyle
                                                                                                                                                                                                                                                                                                                                                                                                                          159pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĄJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gutlerrez-ramos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         anti-inflammatory; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTLA-4"
                                                                                                                                                                       multiple sclerosis,
                                                                                                                                                                                                 diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             as
                                                                                                                                                                                                                                                                          an
```

ω

```
The present sequence represents a CRP1 (CD28 related protein-1) polypeptide. The specification also describes a B7RP1 (B7 related protein-1) polypeptide. The polypeptides are involved in T-lymphocyte activation, and represent a receptor-ligand pair. CRP1 and B7RP1 are predicted to be a type I transmembrane protein. The nucleic acids are useful for regulating T cell activation or proliferation in an animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRP1; CD28 related protein-1; B7RP1; B7 related protein-1
T-lymphocyte activation; type I transmembrane protein; T
T cell proliferation; T-cell mediated disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B08723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B08723 standard;
                                                                                                                                                                                                                                    Claim 11; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-543476/49
N-PSDB; A64554.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          03-FEB-1999;
08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                       Novel nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200046240-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      02-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yoshinaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (AMGE-) AMGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-JAN-2000; 2000WO-US01871.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proteir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YMFMRAVNTAKKSRLTDVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \verb|mkpy| fchv| fv| fc| flir| ltgeingsadhr| mfs| fhnggvqisckypetv| qqlk| mrl| frerede to the following state of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ymfmaavntnkksrlagvt
                                                                                                                                                                                                                                                                                                                                 treatment,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                 acids encoding ent, prevention
                                                                                                                                                                                                                                    1A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0244448
99US-0264527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "
164..200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
21..14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
21..200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note=
                                                                                                                                                                                                                                    174pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . . 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "extracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "mature protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "signal peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "intracellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                 the
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRP1
                                                                                                                                                                                                                                                                                                                                 proteins C
diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B7 related protein-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               domain"
                                                                                                                                                                                                                                                                                                                              S Of T
                                                                                                                                                                                                                                                                                                                                     and B7RP1 are cell mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cell activation;
                                                                                                                                                                                                                                                                                                                                 are useful
ced disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
```

```
RESULT
W75958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Best I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
The present sequence represents a mouse cell surface protein which i expressed by thymocytes and by mitogen-stimulated lymphocytes. The c surface protein induces adhesion of mitogen-stimulated lymphocytes t antibodies recognising the cell surface protein. These antibodies all produce an increase in peripheral blood lymphocytes in the presence an antibody recognising CD3 antigen. The cell surface protein contain the amino acid sequence FDPPPF in its extracellular region and the
                                                                                                              Cell surface molecule expressed in thymocytes and lymphocytes an mediating signal transmission and cell adhesion, and antibodies it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The polypeptides are useful for treating, preventing ameliorating diagnosing a T-cell mediated disorder in an animal. They can also used to identify test molecules that bind to the polypeptides.
                                                                                           Claim
                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                             26-FEB-1998;
27-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                         signal transmission;
mitogen-stimulated.
                                                                                                                                                                                                                                                                                                                                                                                                                     Mouse cell surface protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W75958
                                                                                                                                                                                                 Tamatani
                                                                                                                                                                                                                     (NISB ) JAPAN TOBACCO
                                                                                                                                                                                                                                                                               27-FEB-1998;
                                                                                                                                                                                                                                                                                                       03-SEP-1998
                                                                                                                                                                                                                                                                                                                            WO9838216-A1
                                                                                                                                                                                                                                                                                                                                                   ds sp
                                                                                                                                                                                                                                                                                                                                                                                                 Mouse;
                                                                                                                                                                                                                                                                                                                                                                                                                                             11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                               1998-481144/41.
DB; V53200.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MRAVNTAKKSRLTDVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \verb|eltktk| gsgnavsiknpmlclyhlsnnsvsfflnnpdssqgsyyfcslsifdpppfqern|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFKV-T:|||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  maavntnkksrlagvt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lsggylhiyesqlccqlklwlpvgcaafvvvllfgciliiwfskkkygssvhdpnseymf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138;
                                                                                            9:
                                                                                                                                                                                                                                                                                                                                                                                                cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                 Τ,
                                                                                           Page 110-112; 149pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200
                                                                                                                                                                                                                                                                                                                                                                                                surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                 Tezuka
                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                             98JP-0062217.
97JP-0062290.
                                                                                                                                                                                                                                                                                98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein;
                                                                                                                                                                                                                                                                                                                                                                                                protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67.1%;
                                                                                                                                                                                                                                                                                                                                                                                    protein; thymocyte; lymphocyte;
autoimmune disorder; allergy; c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 723.5; DB 2
Pred. No. 7.1e-74;
9; Mismatches 34
                                                                                           Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                     diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                 cell adhesion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
          esence of contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g or
                                                         is
cell
                                              ξ
```

w ۲

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3333×3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
The present sequence represents a rat cell surface protein which is expressed by thymocytes and by milcogen-stimulated lymphocytes. The cell surface protein induces adhesion of milcogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence YMFM in its intracellular region. The cell surface protein be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                     Cell surface molecule expressed in thymocytes and lymphocytes an mediating signal transmission and cell adhesion, and antibodies it useful in treatment of auto:1mmune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W71874;
                                                                                                 Claim
                                                                                                                                                                        N-PSDB;
                                                                                                                                                                                                                                                                                          27-FEB-1998;
                                                                                                                                                                                                                                                                                                                   03-SEP-1998
                                                                                                                                                                                                                                                                                                                                           W09838216-A1
                                                                                                                                                                                                                                                                                                                                                                   Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                      Rat cell surface protein #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W71874
                                                                                                                                                                                                         Tamatani T,
                                                                                                                                                                                                                                (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ဖ
                                                                                                                                                                                                                                                                                                                                                                                                   cell surface protein; thymocyte; lymphocyte; cell adhesion;
al transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ
                                                                                                                                                                      1998-481144/41.
DB; V61357.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ymfmaavntnkksrlagvt 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YMFMRAVNTAKKSRLTDVT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                              Page 106-109; 149pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                         Tezuka
                                                                                                                                                                                                                                                        98JP-0062217
97JP-0062290
                                                                                                                                                                                                                                                                                           98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            712;
No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                       Cell surface molecule expressed in thymocytes and lymphocytes an mediating signal transmission and cell adhesion, and antibodies it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence YMFM in its intracellular region. The cell surface protein be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                      W71875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                    N-PSDB;
                                                                                                                                                                                  Tamatani T,
                                                                                                                                                                                                                                                           27-FEB-1998;
                                                                                                                                                                                                                                                                                03-SEP-1998
                                                                                                                                                                                                                                                                                                     WO9838216-A1
                                                                                                                                                                                                                                                                                                                         Rattus sp
                                                                                                                                                                                                                                                                                                                                                         signal transmission;
                                                                                                                                                                                                                                                                                                                                                                    Rat;
                                                                                                                                                                                                                                                                                                                                                                                       Rat cell surface protein
                                                                                                                                                                                                                                                                                                                                                                                                             11-DEC-1998
                                                                                                                                                                                                      (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                        cell surface protein; thymocyte; lymphocyte; cell adhesion;
al transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YF---FLECLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQILC 63
                                                                                                                                                             1998-481144/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          maavntnkksrlagmt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dltktkgsgntvsiknpmscpyqlsnnsvsffldnadssqgsyflcslsifdpppfqekn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MRAVNTAKKSRLTDVT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1sggylliyesqlccqlklwlpvgcaafvaallfgcifivwfakkkyrssvhdpnseymf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF-KVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                    V61358
                                                                                  Page 112-115; 149pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                  Tezuka
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                            98JP-0062217.
97JP-0062290.
                                                                                                                                                                                                                                                           98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                       216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 695.5;
Pred. No. le
                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1e-70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ن</u>
                                                                                                                    and .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

The present sequence represents a rat cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The c surface protein induces adhesion of mitogen-stimulated lymphocytes t antibodies recognising the cell surface protein. These antibodies all produce an increase in peripheral blood lymphocytes in the presence an antibody recognising CD3 antigen. The cell surface protein contain the amino acid sequence FDPPPF in its extracellular region and the

protein contains antibodies also

The cell

```
DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ភភពន្ត
ភព្គ
                                                                                                                                                                                                                                                                                                                   Ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Y41136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                             18-JAN-1995;
27-JUN-1991;
22-JAN-1993;
15-APR-1994;
                                                                                                                                                                                                                                                                                                                                  Key
                                  New anti-CTLA4 monoclonal antibodies, used for treating e.g. inflammation, autoimmunity, transplant rejection, infectious diseases or neoplasia \cdot
                                                                                                                                                                                                                                                                             US5977318-A
                                                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                                                                         Monoclonal antibody, MAb; extracellular domain; CTLA4; B7 antigen; T cell interaction; inflammation; autoimmunity; transplantation; G neoplasia; infectious disease; graft versus host disease; psorlast immune disorder; lymphoma; leukemia; autoimmune disease; arthritis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence YMFM in its intracellular region. The cell surface protein can be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
          Examples; Fig 15;
                                                                                                                                                                                                                            07-JUN-1995;
                                                                                                                                                                                                                                                     02-NOV-1999
                                                                                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rat CD28 protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y41136 standard;
                                                                                                                                                                                                                                                                                                                                                                                 diabetes mellitis
                                                                                                                                     (BRIM ) BRISTOL-MYERS SQUIBB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MRAVNTAKKSRL 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF-KVT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YF---FLECLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQILC 63
                                                                                     1999-619712/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   maavntnkksrl 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lsggylliyesqlccqlklwlpvgcaafvaallfgcifivwfakkkyrssvhdpnseymf 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dltktkgsgntvsiknpmscpyqlsnnsvsffldnadssqgsyflcslsifdpppfqekn 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     yfscvfvfcfliklltgelndlanhrmfsfhdggvqiscnypetvqqlkmqlfkdrevlc 63
                                                                                                                                                                                                                                                                                                                                                        зþ
                                                                                                              PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216
                                                                                                            Brady W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                           95US-0375390.
91US-0723617.
93US-0008898.
94US-0228208.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                            95US-0488062
                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1..225
                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein; 225
          74pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64.18;
69.38;
                                                                                                            Damle NK,
                                                                                                                                                                                                                                                                                                     "residues indicated Xaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                     င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 690.5; D
Pred. No. 4.2e-
6; Mismatches
                                                                                                            Linsley PS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38;
                                                                                                            Ledbetter JA;
                                                                                                                                                                                                                                                                                                   are unspecified'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216;
                                                                                                                                                                                                                                                                                                                                                                                                      psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
```

```
οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 versus host disease (GCHD), psoriasis, immune disorders associated with graft transplantation rejection, T cell lymphoma, T cell acute lymphoblastic leukemia, testicular angiocentric R cell lymphoma, benign lymphocytic angiitis, autoimmune diseases such as lupus erythematosus, Hashimoto's thryoiditis, primary myxedema, Graves disease, pernicious hashimoto's thryoiditis, autoimmune disease, and in the second property of the second pr
                                                                                                                                                    (SCHE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                anemia, autoimmune atrophic gastritis, Addison's disease, insulin dependent diabetes mellitis, Goodpasture's syndrome, myasthenia gravis, pemphigus, Crohn's disease, sympathetic ophthalmia, autoimmune uveitis, multiple sclerosis, autoimmune hemolytic anemia, primary biliary cirrhosis, idiopathic thrombocytopenia, chronic action hepatitis, ulcerative colitis, Sjogren's syndrome, rheumatoid arthritis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention provides new monoclonal antibodies (MAbs) which bind the extracellular domain of CTLA4 and prevent the binding of CTLA4 to B7 antigen. The MAbs can be used for regulating T cell interactions with B7 positive cells. They can also be used for preventing or reversing inflammation and for treating autoimmunity, transplantation, infectious
                         N-PSDB;
                                                                                                                                                                                                                                        01-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Felis domesticus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polymyositis, scleroderma, and mixed connective tissue disease. They can also be used for detection, diagnosis, prognosis and monitoring of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diseases and neoplasia. They can be used for treating diseases e.g. graversus host disease (GCHD), psoriasis, immune disorders associated with
                                               WPI; 2000-062155/05
                                                                                                    Winslow
                                                                                                                                                                                                                                                                                          30-APR-1999;
                                                                                                                                                                                                                                                                                                                                            11-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                              W09957295-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CD28; feline;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Feline CD28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y32286 standard; Protein; 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    148 xxxqtspklfwplvvvagvllcygllytvtlciiwtnsrr 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   llvydnnevxslscrysynllakefraslykg--vnsdvxevcvgngnftyqpqfrpnvg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----CQLKFWLPIGCAAFVVC--ILGCILIC--WLTKKK 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -FCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-- 136
                                                                                                    ВJ,
                         234839
                                                                                                                                                    SCHERING-PLOUGH LTD.
SCHERING-PLOUGH VETERINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                    Cochran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cat; recombinant virus;
r; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ã,
                                                                                                                                                                                                                                        98US-0071711.
                                                                                                                                                                                                                                                                                          99WO-US09504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y41133-38 represent sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.3%;
                                                                                                    ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 143; DB 20;
Pred. No. 3.8e-08;
30; Mismatches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĄΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     immunomodulator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length .225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of some CD28 and CTLA4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  graft
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
```

```
PR
PR
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 also provides: a recombinant virus further comprising a foreign nucleic acid encoding an immunogen derived from a feline pathogen; recombinant viruses capable of enhancing an immune response to protect against disease; recombinant viruses expressing antisense sequences, capable of suppressing an immune response in a feline, e.g. for treatment of autoimmune disease or transplant rejection; and recombinant viruses expressing DNA encoding CD80 and/or CD86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       release. The invention relates to a recombinant virus that contains at least one foreign nucleic acid, inserted into a nonessential genomic region, that encodes feline CD28, CD80, CD86 or CTLA-4 protein, or their immunogenic fragments, and is expressed when the recombinant virus is introduced into a suitable host. The invention
                   (TEXA ) TEXAS
                                                         01-MAY-1998;
                                                                                                                                                                                                                                                                                                                  CD28; receptor; cat; vaccine; feline immunodeficiency virus; FIV; feline leukaemia virus; feline infectious peritonitis virus; feline panleukopaenia virus; feline callcivirus; feline reovirus-3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                         30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                               15-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 used to reduce or eliminate a tumour in cats.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents feline CD28, as deduced from isolated peripheral blood mononuclear cell cDNA (see Z34839). Manipula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel recombinant virus useful as immunomodulators, particularly in
                                                                                                                                                                                                         Felis
                                                                                                                                                                                                                                            parasite;
                                                                                                                                                                                                                                                                 rabies virus; chlamydia;
                                                                                                                                                                                                                                                                                                                                                                                          Cat CD28 receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y32279 standard; Protein; 221 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the expression of CD28 or CTLA-4 (and/or their co-stimulatory ligands CD80 and CD86) regulates T cell proliferation and cytokine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               151 skpfw-----alvvvggilgfysllatvalgacwmktkr 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141 --- FWLPIGCAAFVVC--ILG------CILICWLTKKK 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32 IFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKG--SGNTVSIKSLKF-CHSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lgnetvtfylrnlfvnqtdiyfckievmypppyidneksngtiihvkekhlcpaqlspes 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-CQLK--- 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vvynnevnlsckythnffskefraslykgvdsavevcvvngnyshqpqfysstgfdcdgk 90
                                                                                                                                                                                                         domesticus
                                                                                                                                                                                                                                                             rotavirus; feline coronovirus; feline syncytial virus; sarcoma virus; feline herpesvirus; feline Borna disease; virus; chlamydia; Toxoplasmosis gondii; Dirofilaria immitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                              autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fig 4A;
                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                    A & M SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                         98US-0071699
                                                                                           99WO-US09502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            230pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13.1%;
28.1%;
                                                                                                                                                                                                                                              disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 141; DB 21;
Pred. No. 6.3e-08;
2; Mismatches 63;
                                                                                                                                                                                                                                                                                                                                                    feline immunodeficiency virus;
                                                                                                                                                                                                                                            transplant rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 221;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                              therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Manipulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
```

```
FTT FTT XXX
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           coexpression of CD28 with CD80 (see Y32276) or CD86 (see Y32278)
and a tumour antigen or an antigen from a pathogenic organism has
the ability to activate or enhance activation of T-lymphocytes,
inducing the production of cytokines. The invention provides
isolated nucleic acids encoding feline CD86 (B7-2) ligand, feline
CD80 (B7-1) ligand, feline CD28 receptor or feline CTLA-6
(CD152) receptor, as well as vectors comprising the nucleic acids,
and polypeptides encoded by the nucleic acids. It also provides
vaccines comprising the CD80, CD86 or CTLA-4 polypeptides and
further comprising immunogens derived from pathogens, especially
feline immunodeficiency virus (FIV), feline leukaemia virus,
feline callictvirus, feline recvirus-3, feline panleukopaenia virus
feline callictvirus, feline recvirus-3, feline aarrorma virus-
coronovirus, feline syncyttal virus-6-line aarrorma virus-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      feline callcivirus, feline reovirus-3, feline rotavirus, feline coronovirus, feline syncytial virus, feline sarcoma virus, feline herpesvirus, feline Borna disease virus, rables virus, chlamydia, Toxoplasmosis gondii, Dirofilaria immitis, or a flea, bacterial pathogen, or parasite (all claimed). Vaccines capable of enhancing an immune response, and vaccines capable of suppressing an immune response (suitable for treating an autoimmune disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence represents fel coexpression of CD28 with CD80 (see and a tumour antigen or an antigen
                                                                            Key
                                                                                                                                                                         cloning technique; cell surface antigen; immunodiagnosis;
                                                                                                                                                                                                                  Human CD28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Collison EW,
                                                                                                                    Homo sapiens
                                                                                                                                                         tumour.
                                                                                                                                                                                                                                                        21-MAY-1992
                                                                                                                                                                                                                                                                                                                                 R20805 standard; Protein; 220 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or tissue or organ transplant rejection) are claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 1A; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel feline proteins used to produce feline vaccines which prevent infectious disease or to promote growth in homologous or heterologous
                                                           Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                            151 skpfw-----alvvvggilgfysllatvalgacwmktkr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141 --- FWLPIGCAAFVVC--ILG------CILICWLTKKK 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32 IFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKG--SGNTVSIKSLKF-CHSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-CQLK--- 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vvynnevnlsckythnffskefraslykgvdsavevcvvngnyshqpqfysstgfdcdgk 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lgnetvtfylrnlfvnqtdiyfckievmypppyidneksngtiihvkekhlcpaqlspes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 Similarity
45; Conserv
                                                                                                                                                                                                               antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hash SM,
/label signal
19..220
37..39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4A;
                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                represents feline CD28 receptor. with CD80 (see Y32276) or CD86 (or an antigen from a pathogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 141; DB 21;
Pred. No. 6.3e-08;
2; Mismatches 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 221;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98
```

Modified-site

```
Z X Z X Z X
                                                                                                                                                                                                       Š
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                        Š
RESULT 15
R27103
                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T F T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9999999
                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                 ches
                     CD28 protein; T-cell immune response; Tp44; differentiation antigen;
                                                                                                                     R27103 standard;
                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   The CD28 antigen amino acid sequence was predicted from the nucleotide sequence of a cDNA clone isolated from a human lymphoblastoid cell line JY library using the antibody enrichme method (see Q21167). The sequence of the CD28 antigen has substantial homology with mouse and rabbit immunoglobulin heavy-chain variable regions over a domain spanning almost the entire extracellular portion of CD28.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seed B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-JUL-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ,15-JUL-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-JAN-1992.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Region
                                                                       25-FEB-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 3; Fig 7; 160pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New CD53 cell surface antigen and DNA encoding immuno-therapy and diagnosis of haematopoietic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1992-056864/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9201049-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GEHO-) GEN HOSPITAL CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Modified-site
                                                                                                                                                                                 148
                                                                                                                                                                                                       137 -CQLKFWLPIGCAAFVVC----ILGCILICWLTKKKYSSSVHDPNGEYMFM 182
                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                              28 mlvaydnavnlsckysynlfsrefraslhkgldsavevcvvygnysgglgvysktgfncd 87
                                                                                                                                                                                                                                                                                                       30 MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGSGN---TVSIKSLKFCH
                                                                                                                                                                                                                                                                                                                                 Local Similarity 24.6 nes 42; Conservative
                                                                                                                                                                                gpskpfwvlvvvggvlacysllvtvafiifwvrskr-srllh---sdymnm 194
                                                                                                                                                                                                                             gklgnesvtfylqnlyvnqtdiyfckievmypppyldneksngtiihvkgkhlcpsplfp
                                                                                                                                                                                                                                                      SQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q21167.
                                               encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aruffo A,
                                                                                                                                                                                                                                                                                                                                                                                             220 AA;
                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90US-0553759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90WO-US04986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label- N-linked_glycosylation 92..94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label= N-linked_glycosylation
129...131
/label= N-linked_glycosylation
153...179
                                              bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label= N-linked_glycosylation 105..107
                                                                                                                    Protein; 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= N-linked_glycosylation
                                                                                                                                                                                                                                                                                                                                        12.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Amiot M;
                                              the CD28
                                                                                                                                                                                                                                                                                                                                 31;
                                                                                                                                                                                                                                                                                                                                           Score 136; DB 13;
Pred. No. 2.3e-07;
                                              gene
                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       it - for
neoplasms, etc.
                                                                                                                                                                                                                                                                                                                                                      Length 220;
                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enrichment
                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                        136
                                                                                                                                                                                                                                                                                                                               7;
```

Search completed: Job time: 43 sec

мау

30,

2001,

16:49:46

7;

```
Qy
                                                            В
                                                                                          Qγ
                                                                                                                           В
                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                       XYXYX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŦΉ
                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                 The cDNA sequence in 028837 is derived from Aruffo A and Seed B, PNAS USA 84, 8573-77, 1987. The CD28 cDNA encodes a protein of 220 AAs (R27103). It contains a signal peptide from AAs 1-18 Which is cleaved during the maturation of CD28 protein. The transmembrane region is AAs 153-79. For the production of soluble CD28 protein, the transmembrane region is deleted. The CD28 protein derived from p9-MIT comprises residues 19-157 and is not soluble; the CD28 protein derived from p9-C17 comprises residues 19-151 and is soluble. MIT and C17 are primers. T7 primer is used as the 5 primer to pair with any 3' primer, eg, MIT and C17, in a PCR reaction for the procurement of trucated CD28 gene which would direct the production of soluble CD28 protein. A compound containing residues 19-151 of CD28 protein is claimed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
Peptide
                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 1; 43pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Soluble proteins binding to B7 proteins and block antigen presenting cells - are useful in treating T-cell mediated immunosuppression diseases e.g. transplant rejection, autoimmune diseases etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KO JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-MAR-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CYTO-) CYTOMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-MAR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9215671-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Region
   148
                                137
                                                                88
                                                                                                                                                                                                       Local
                                                                                             85
                                                                                                                             28
                                                                                                                                                         30 MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGSGN---TVSIKSLKFCH 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1992-331717/40.
DB; Q28837.
gpskpfwvlvvvggvlacysllvtvafiifwvrskr-srllh---sdymnm 194
                                                            gklgnesvtfylqnlyvnqtdiyfckievmypppyldneksngtiihvkgkhlcpsplfp 147
                                                                                                                         SQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-----
                               -CQLKFWLPIGCAAFVVC----ILGCILICWLTKKKYSSSVHDPNGEYMFM 182
                                                                                                                                                                                         42; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IP SH;
                                                                                                                                                                                                                                                                       220
                                                                                                                                                                                                                                                                       ₽
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91US-0666809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92WO-US01867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= signal
153..179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label= Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                        12.6%;
                                                                                                                                                                                         31;
                                                                                                                                                                                        Score 136; DB 13;
Pred. No. 2.3e-07;
31; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             region
                                                                                                                                                                                                                       Length 220;
                                                                                                                                                                                         Indels
                                                                                                                                                                                           22;
                                                                                                                                                                                        Gaps
                                                                                             136
                                                                                                                             87
```

THIS PAGE BLANK (USPTO)

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1067.5
695.5
690.5
157.5
147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB DB
79..
79.5
78.5
78.5
77.5
                                                                                                                                                                                                                                                                                                                                                                                                                       141.5
138
136
105.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                             seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR_67:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
                                                                                                                                                                                                                                                                                                                                                                                                                         99.0
64.5
64.1
14.6
13.6
13.1
12.8
12.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-509-283-2
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          198801 seqs, 68722935 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MKSGLWYFFLFCLRIKVLTG....YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         May 30, 2001, 16:49:03; Search time 14.16 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5
Copyright (c) 1993 - 2000 Comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
  173
221
221
221
283
383
383
635
223
285
186
248
330
330
330
330
360
360
276
360
283
360
283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
S 23H028
S 22H028
S 23H028
S 23H028
S 22H028
S 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                              $78540
JC7397
JC7396
$24413
146689
A43523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (without alignments)
960.956 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         activation-inducib
activation-inducib
T-cell surface gly
CD28 precursor - r
T-cell surface of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198801
                                                      probable glycoprot
Fc gamma (IGG) rec
Fc gamma-1/gamma-2
hypothetical prote
hypothetical prote
31.6K hypothetical
secretory compleme
membrane-bound com
Fc gamma (IGG) rec
killer cell inhibi
                                                                                                                                                                                                                                                                                                                                    hypothetical prote cytotoxic T-lympho hypothetical prote killer cell inhibi
                                                                                                                                                                                                                                                                                                                                                                                                                 T-cell surface gly
cell surface prote
T-cell surface gly
CHT28 protein - ch
                   hypothetical prote
T-cell surface gly
                                                                                                                                                                                                                                                                   cytotoxic T-lympho
conserved hypothet
cytotoxic T-lympho
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
```

RESULT 1 S78540 inducible T-cell co-stimulator ICOS precursor - human C;Species: Homo sapiens (man) C;Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_ch C;Accession: S78540; S78749 R;Kroczek, R. submitted to the Protein Sequence Database, June 1998 A;Reference number: S78540 A;Accession: S78540 A;Accession: S78540 A;Residues: 1-199 <kro> A;Experimental source: cell line MOLT-4V R;Hutloff, A.; Dittrich, A.M.; Beier, K.C.; Eljaschewitsch, Nature 397, 263-266, 1999 A;Title: ICOS is an inducible T-cell co-stimulator structur A;Reference number: S78748; MUID:99127892 A;Accession: S78748</kro>	ALIGNMENTS	30 77.5 7.2 546 2 S52053 31 77 7.1 1070 2 JC4593 32 76 7.1 301 2 IS4209 33 76 7.1 301 2 S29360 34 75.5 7.0 261 2 S29360 35 75.5 7.0 277 2 T21330 36 75.5 7.0 277 2 T21330 37 75.5 7.0 2132 1 T21602 37 75.5 7.0 2132 2 T14606 39 74 6.9 763 2 S17998 40 74 6.9 223 2 I46696 41 74 6.9 496 2 JH0165 42 74 6.9 496 2 JH0165 43 74 6.9 496 2 S46459 44 73.5 6.8 275 2 S61179 45 73.5 6.8 322 2 I48207
#text_change 07-May-1999 998 hewitsch, B.; Kraft, R.; Anagnostop structurally and functionally rela		cytochrome-c oxida protein-tyrosine k hypothetical prote Fc gamma (IgG) rec Fc gamma (IgG) rec fc gamma (IgG) rec hypothetical prote host specificity p variant-specific gene COXI intron 4 CTLA-4 precursor - hypothetical prote glycine receptor b grobable membrane corticotropin-rele

A; Accession: S78748 A; Molecule type: mRNA A; Residues: 1.199 < HUT1> A; Experimental source: cell line MOLT-4V C; Complex: homodimer C; Complex: homodimer C; Superfamily: immunoglobulin homology C; Complex: homodimer C; Superfamily: homology C; Match D; Superfamily: homology C; Match D; Superfamily: homology C; Homologlobulin homology C; Homologlobulin homology C; Homologlobulin homolo

ω

```
A;AGCESSION.
A;AGOlecule type: protein
A;Résidues: 21-40 <TE2>
A;Résidues: This protein is an inducible cell surface glycoprotein, and a type I transmem
A;Comment: This protein is an inducible maturation or selection of T cells in thymus.
                                                                                                                                                                                                                                                         activation-inducible lymphocyte immuno-mediatory molecule-1 - rat C;Species: Rattus norvegicus (Norway rat) C;Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000 C;Accession: JC7396; PC7099 R;Tezuka, K.; Tsuji, T.; Hirano, D.; Tamatani, T.; Sakamaki, K.; Kobayashi, Y.; Blochem. Biophys. Res. Commun. 276, 335-345, 2000 A;Tille: Identification and characterization of rat AILIM/ICOS, a novel T-cell c A;Reference number: JC7396 A;Contents: Spleen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A:Cross-references: DDBJ:AB023134
A:Accession: PC7100
A:Goule type: protein
A lidues: 21-40 <TE2>
C: mment: This protein is an ind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000
C;Accession: JC7397; pC7100
R;Tezuka, K.; Tsuji, T.; Hirano, D.; Tamatani, T.; Sakamaki, K.; Kobayashi, Y.; Kamada, Blochem. Biophys. Res. Commun. 276, 335-345, 2000
A;Title: Identification and characterization of rat AILIM/ICOS, a novel T-cell costimul. A;Reference number: JC7396
A;Contents: Spleen
A;Contents: Spleen
                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-216 < TEZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                           A; Accession: PC7099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Accession: JC7397
A; Molecule type: mRNA
A; Residues: 1-200 <TEZ>
                                                                                                                                                                                                                                           A; Accession: JC7396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: ailim-2
C;Keywords: gly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activation-inducible lymphocyte immuno-mediatory molecule-2 - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                    Cross-references: DDBJ:AB023133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ecule type: protein described the maturation of glycoprotein, and a type I transmem and plays an important role for the maturation or selection of T cells in thymus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 MEMRAVNTAKKSRLTDVTL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180 MEMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MRAVNTAKKSRLTDVT 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DITKTKGSGNTVSIKNPMSCPYQLSNNSVSFFLDNADSSQGSYFLCSLSIFDPPFFQEKN 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF-KVT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YF---FLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQILC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAAVNTNKKSRLAGMT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LSGGYLLIYESQLCCQLKLWLPVGCAAFVAALLFGCIFIVWFAKKKYRSSVHDPNSEYMF 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YFSCVFVFCFLIKLLTGELNDLANHRMFSFHDGGVQISCNYPETVQQLKMQLFKDREVLC 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T-cell; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 695.5; DB:
Pred. No. 1.6e-60
7; Mismatches 4
                                                                                                                                                                                                                                                                                                             of rat AILIM/ICOS, a novel T-cell costimul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                           Kamada,
                      CD28
                                              RESULT
146689
                                                                                                                                           В
                                                                                                                                                                                     δÃ
```

```
В
                                                                                                                              Qy
                                                                                                                                                                                   Вр
                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X55288; NID:g55905; PIDN:CAA39003.1; PID:g55906 C;Superfamily: T-cell surface glycoprotein CD28; immunoglobulin homology C;Keywords: glycoprotein Cpxe;Keywords: glycoprotein F;34-115/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:X55288
R;Clark, G.J.; Dallman, M.J.
submitted to the EMBL Data Library,
A;Reference number: S38722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Rattus norvegicus (Norway rat)
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 21-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Immunogenetics 35, 54-57, 1992
A; Title: Identification of a cDNA encoding the rat CD28 homologue A; Reference number: S24413; MUID:92104640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-152, 'P', 154-218 <CL2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S38722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-218 <CLA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: ailim-1
C;Keywords: glycoprotein; T-cell; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: S24413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Clark, G.J.; Dallman, M.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T-cell surface glycoprotein CD28 - rat
                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182 MRAVNTAKKSRL 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184 MAAVNTNKKSRL 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123 LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124 LSGGYLLIYESQLCCQLKLWLPYGCAAFVAALLFGCIFIYWFAKKKYRSSVHDPNSEYMF
                                                                                        87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 69.3 hes 133; Conservative
                                                                                                                                     83
                                                                                                                                                                                   29
                                                                                                                                                                                                                         30 MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGSGNTVSIKSLK-----F 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64 DLTKTKGSGNTVSIKNPMSCPYQLSNNSVSFFLDNADSSQGSYFLCSLSIFDPPPFQEKN 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 YFSCVFVFCFLIKLLTGELNDLANHRMFSFHDGGVQISCNYPETVQQLKMQLFKDREVLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 YE---FLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQILC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF-KVT 122
SPKLFWALVVVAGVLLCYGLLVTVTLCIIWTNSRR
                                        CQLKFWLPIGCAAFVVC--ILGCILIC--WLTKKK
                                                                                      CDGNEDNETTTERLWNLDVNHTDIYECKIEVMYPPPYLDNEKSNGTIIHIKEKHLCHAQT
                                                                                                                CHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC---- 136
                                                                                                                                                                                LLVVDNNEVSLSCRYSYNLLAKEFRASLYKG--VNSDVEVCVGNGNFTYQPQFRPNVGFN
                                                                                                                                                                                                                                                                              40;
                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64.1%;
                                                                                                                                                                                                                                                                                                 14.6%; Score 157.5;
25.8%; Pred. No. 5e-
                                                                                                                                                                                                                                                                              29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 690.5; DB 2
Pred. No. 5.4e-60;
6; Mismatches 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       October 1990
                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                 5e-08;
181
                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                              67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38;
                                                                                                                                                                                                                                                                                                                    Length 218;
                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 216;
                                                                                                                                                                                                                                                                           19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ű
                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                   86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
```

precursor -

rabbit

G

7;

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length:
length:
                                                                                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_AA:*

// Cgn2_6/ptodata/2/1aa/5A_COMB.pep:*

// Cgn2_6/ptodata/2/1aa/5B_COMB.pep:*

// Cgn2_6/ptodata/2/1aa/6A_COMB.pep:*

// Cgn2_6/ptodata/2/1aa/6B_COMB.pep:*

// Cgn2_6/ptodata/2/1aa/6B_COMB.pep:*

// Cgn2_6/ptodata/2/1aa/backfiles1.pep:*
May 30, 2001, 16:49:03; Search time 13.01 Seconds (without alignments) 292.371 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185757 seqs, 19210857 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-509-283-2
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
20000000000
                                                                                                                                                                                                                                                                                                                                                        DB
      US-08-228-208A-20
US-08-459-558-4
US-08-459-818-24
US-08-465-078-24
US-08-488-062-24
US-08-28-208A-19
US-08-28-208A-21
US-08-28-208A-21
US-08-28-208A-21
US-08-465-078-23
US-08-465-078-23
US-08-465-078-23
US-08-465-078-23
US-08-465-078-23
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-465-078-25
US-08-630-172-1
US-08-530-172-3
US-08-530-58-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            summaries
                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185757
                                                                                                                                                                                                                                                                                                                                                       Description
                  Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                 Sequence
Sequence
                                                                                                         Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                        Sequence
Sequence
                                                                                                                                                                                                             Sequence
Sequence
                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                    Sequence
Sequence
                                                                                                                                                             Sequence
                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                   Appli
Appli
Appli
Appl
                                                                                                          Appli
Appli
Appl
                                                                                             Appl
                                                                                                                                               App1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-228-208A-20
```

Ģ	4	ũ	ັນ	Ľ	Ö	õ	8	7	5	5	4	ũ	ວ	Ξ	õ	õ	æ
80.5	80.5	81	81	81	81	81	81	81	81	81	81.5	81.5	83.5	84.5	84.5	84.5	84.5
7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.6	7.7	7.8	7.8	7.8	7.8
234	234	187	187	187	187	187	187	187	187	187	330	330	223	226	226	226	226
Ν	Н	ۍ	w	N	N	N	N	N	<u> </u>	<u>-</u>	N	Ν	w	N	N	N	N
US-08-459-818-21	US-08-505-058-1	PCT-US95-06726-36	US-08-228-208A-14	US-08-488-062-14	US-08-725-776-14	US-08-465-078-14	US-08-889-666-14	US-08-459-818-14	US-08-008-898-14	US-08-067-684-14	US-08-332-562A-134	US-08-332-562A-81	US-08-228-208A-17	US-08-488-062-26	US-08-725-776-26	US-08-465-078-26	US-08-889-666-26
Sequence 21, App	Sequence 1, App.	Sequence 36, App	Sequence 14, App	Sequence 14, App	Sequence 14, App			-		Sequence 14, App	,-	•	Sequence 17, Appl	•	Sequence 26, App	•	Sequence 26, App
۲	μ.	ĭ	ĭ	ĭ	ĭ	ĭ	7	7	ĭ	2	ğ	2	ĭ	ĭ	2	1	2

ALIGNMENTS

Sequence 20, Application US/08228208A Patent No. 6090914 PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/008,898 FILING DATE: 22-JAN-1993 APPLICATION NUMBER: 07/723,617 FILING DATE: 27-JUN-1991 ATTORNEY/AGENT INFORMATION: NAME: Adilano, Sarah B REGISTRATION NUMBER: 34,470 REFERENCE/DOCKET NUMBER: 30436-3 TELECOMMUNICATION INFORMATION: TELEPHONE: 310,445-1140 APPLICANT: Linsley, Peter S. APPLICANT: Ledbetter, Jeffrey A. APPLICANT: Damle, Nitin K. APPLICANT: Brady, William APPLICANT: Wallace, Philip M. TITLE OF INVENTION: PROTEINS AND U. NUMBER OF SEQUENCES: 22 GENERAL INFORMATION: INFORMATION FOR SEQ ID NO: TYPE: amino acid STRANDEDNESS: unkr TOPOLOGY: linear MOLECULE TYPE: prote SOFTWARE: FastSEQ Version 2.0 CURRENT APPLICATION DATA: APPLICATION UMBER: US/08/228 FILING DATE: 15-APR-1994 CLASSIFICATION: 435 COMPUTER READABLE FORM: MEDIUM TYPE: Diskette SEQUENCE CHARACTERISTICS: LENGTH: 218 amino acid CORRESPONDENCE ADDRESS COUNTRY: U: ZIP: 90025 COMPUTER: IBM CON OPERATING SYSTEM: STREET: 11150 San: CITY: Los Angeles TELEFAX: 310 445-9031 ADDRESSEE: CA 3E: Merchant & Gould 11150 Santa Monica Boulevard, Suite 400 218 amino acids USA Compatible unknown US/08/228, 208A 30436-30US01 HYBRID FUSION USES THEREOF

```
₽
                                     о<u>у</u> .
                                                                                                                                                                               ; MOLECULE T
US-08-505-058-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-505-058-4
                                                                                                Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/08505058 tent No. 5773253 NERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 14.8%; Score 159.5; DB 3; Best Local Similarity 25.8%; Pred. No. 5.4e-11;
                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                               TELEPHONE: 310-445-1140
TELEFAX: 310-445-9031
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/228,208
FILING DATE: 15-APR-1994
ATTORNEY/AGENT INFORMATION:
NAME: Adriano, Sarah B.
REGISTRATION NUMBER: 34,470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Peach, Robert
TITLE OF INVENTION: CTLA4 Mutant Molecules and
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: 310-445-1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147 SPKLFWPLVVVAGVLLCYGLLYTVTLCIIWTNSRR 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137 COLKEWLPIGCAAFVVC--ILGCILIC--WLTKKK 167
30 LLVYDNNEVXSLSCRYSYNLLAKEFRASLYKG--VNSDVXEVCVGNGNFTYQPQFRPNVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 11150 Sant
CITY: Los Angeles
STATE: California
                                                                                                Local Similarity
                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 34,470
REFERENCE/DOCKET NUMBER: 30436.30USI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87
                                   30 MFIFHNGGVQIL-CKYPD--IVQQFKMQLLKGGQILCDLTKT-KGSGNTVSIKSLK---- 81
                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 90025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83 CHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC---- 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29 LLYYDNNEVSLSCRYSYNLLAKEFRASLYKG--VNSDVEVCVGNGNFTYQPQFRPNVGFN 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30 MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGSGNTVSIKSLK-----F 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                              ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDGNFDNETVTFRLMNLDVNHTDIYFCKIEVMYPPPYLDNEKSNGTIHIKEKHLCHAQT 146
                                                                                                                                                                                                                                                           amino acid
                                                                                                                                                                                             TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Merchant & Gould
11150 Santa Monica Blvd., Suite 400
                                                                                                                                                                                                                                                                              225 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ledbetter, Jeffrey A.
                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Linsley, Peter S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                      linear
                                                                                              13.3%; Score 143; DB 1 25.6%; Pred. No. 5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              us/08/505,058
                                                                            30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30; Mismatches
                                                                                                                 DB 1; Length 225;
                                                                              65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Uses Thereof
                                                                            Indels 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 218;
                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7;
```

```
QΥ
                                                                        В
                                                                                                          δõ
                                                                                                                                                 В
                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                       ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-459-818-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-459-818-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                          Query Match 13.3%; Score 143; DB 2
Best Local Similarity 25.6%; Pred. No. 5e-09;
Matches 41; Conservative 30; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 5851795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 24,
                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 310-445-1140
TELEFAX: 310-445-9031
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 225 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Adriano, Sarah B.
REGISTRATION NUMBER: 34,470
REFERENCE/DOCKET NUMBER: 300
TELECOMMUNICATION INFORMATION:
TELEPHONE: 310-445-1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Adriano, Sarah B.
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: FastSeq 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ledbetter, Jeffrey A. APPLICANT: Damle, Nitin K. APPLICANT: Brady, William
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148 XXXQTSPKLFWPLVVVAGVLLCYGLLYTVTLCIIWTNSRR 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 11150 Sant
CITY: Los Angeles
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137 -----CQLKFWLPIGCAAFVVC--ILGCILIC--WLTKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 225 amino TYPE: amino acid
                                                                                                                                                30 LLVYDNNEVXSLSCRYSYNLLAKEFRASLYKG--VNSDVXEVCVGNGNFTYQPQFRPNVG 87
                                                                                                                                                                                     30 MEIFHNGGVQIL-CKYPD--IVQQFKMQLLKGGQILCDLTKT-KGSGNTVSIKSLK----
                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: FILING DATE: 02-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Merchant & Gould STREET: 11150 Santa Monica Blvd.,
XXXQTSPKLFWPLVVVAGVLLCYGLLYTVTLCIIWTNSRR 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----CQLKFWLPIGCAAFVVC--ILGCILIC--WLTKKK 167
                                                                        FNCDGNFDNETVTFRLWNLDVNHTDIYFCKIEVMYPPPYLDNEKSNGTIIHIKEKHLCHA 147
                                                                                            -FCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC-- 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4, Application US/08459818
5851795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Linsley, Peter S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             02-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTLA4 Receptor and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/459,818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30436.35US02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Suite 400
                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                            65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                                                                                              Length 225
                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                          24;
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                     81
```

US-08-889-666-24; Sequence 24, Application US/08889666

9

RESULT

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  arched:
 SPTREMBL_15:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fung1:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_unclassified:*
13: sp_vertebrate:*
14: sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       May 30, 2001, 16:49:23; Search time 22.68 Seconds (without alignments) 1023.244 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-509-283-2
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                            374700 seqs, 117207915 residues
sp_plant:*
sp_rodent:*
sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                             374700
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result	Score	Query Match	Query Match Length DB	ВB	Ħ	Description
1	1067.5	99.0	199	4	8M976Ö	Q9y6w8 homo sapien
2	727	67.4	200	11	OSAM60	
ω	723.5	67.1	200	11	Q9JL17	. Q9jl17 mus musculu
4	695.5	64.5	200	11	Q9R1T7	Q9rlt7 rattus norv
5	690.5	64.1	216	11	Q9WVR9	w
0	142	13.2	221	11	Q9JLV4	Q9jlv4 marmota mon
7	141	13.1	221	σ	002757	002757 felis silve
8	141	13.1	221	6	Q9N2I4	Q9n2i4 felis silve
9	139	12.9	221	σ	Q9N0N8	Q9n0n8 canis famil
10	138.5	12.8	219	6	097630	097630 ovis aries
11	138	12.8	173	6	Q28289	Q28289 canis famil
12	93	8.6	988	σ	Q17710	Q17710 caenorhabdi
13	86	8.0	485	υ	Q20139	Q20139 caenorhabdi
14	86	8.0	635	11	055002	O55002 mus musculu
15	86	8.0	663	11	070434	O70434 mus musculu
16	84	7.8	223	11	Q9QZZ7	Q9qzz7 mus musculu
17	84	7.8	419	13	Q91A91	Q9ia91 morone saxa
18	83.5	7.7	285	ب	028747	O28747 archaeoglob
19	83	7.7	209	4	Q9NYK4	Q9nyk4 homo sapien

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
76	76	76	76	76	76	76.5	76.5	76.5	76.5	76.5	77	77.5	78	78	78.5	78.5	79.5	. 80	80.5	81	81	81.5	81.5	82	83
7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.3	7.3	7.4	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.7
948	450	450	448	192	174	863	619	539	539	539	415	546	269	235	539	231	680	761	321	276	276	563	223	296	223
U1	4	4	11	14	11	10	10	14	14	14	10	œ	4	13	14	ഗ	11	11	4	14	14	ഗ	11	14	11
Q9VDQ7	09UNA8	075595	088597	011432	Q9Z1A7	Q9M0D8	Q9xGG1	P88843	P88840	P88839	Q9LMJ5	Q35989	095297	Q90770	P88842	045668	055001	Q9R160	Q9UGF6	Q64861	Q98822	017395	Q62859	Q73315	Q9JLV3
		075595 homo sapien	O88597 mus musculu	Oll432 avian adeno	Q9z1a7 rattus norv	Q9m0d8 arabidopsis	Q9xgg1 sorghum bic	P88843 avian infec	P88840 avian infec	P88839 avian infec	Q9lmj5 arabidopsis	Q35989 trypanoplas	095297 homo sapien	Q90770 gallus gall	P88842 avian infec	O45668 caenorhabdi	O55001 mus musculu	Q9r160 mus musculu	Q9ugf6 homo sapien	Q64861 human adeno	Q98822 human adeno	017395 caenorhabdi	Q62859 rattus norv	Q73315 human immun	Q9jlv3 marmota mon

ALIGNMENTS

QY 61 ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK	Query Match 99.0%; Score 1067.5; DB 4; Length 199; Best Local Similarity 99.5%; Pred. No. 7.6e-106; Matches 198; Conservative 0; Mismatches 0; Indels 1; G Qy 1 MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ Db 1 MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ	OPY6W8 ID O9Y6W8 ID O9Y6W8 ID O9Y6W8 AC Q9Y6W8 AC Q9Y6W8 DT 01-NOV-1999 (TrEMBLrel. 12, Created) DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update) DT 01-NOV-1999 (TREMBLrel. 12, Last annotation update) DE ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE AILIM DE PRECURSOR. OS Homo sapiens (Human). OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; OC Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. OX NCBL_TaxID=9806; RN [1] RP SEQUENCE FROM N.A. RC TISSUE-BLOOD; RA Tezuka K., Tamatani T.; RT "Cell surface molecule mediating cell adhesion and signal transmission."; RT "submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AB023135; BAA82129.1; SQ SEQUENCE 199 AA; 22624 MW; 214EC741C9BDC9FC CRC64;
PPPFK 120 PPFK 120 PNGEY 179 PNGEY 180	1; Gaps 1; 1; Gaps 1; LKGGQ 60 	im tomi;

Š

180

198

```
RESULT
Q9JL17
IB Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT RESULT SAMPLES AC OS AC
                                                                                                                                                 Ş
                                                                                                                                                                                             밁
                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
                                                                                                                                                                                                                                                                                                                                                                                                                                        st Lo
09JL17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Signal.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-BALB/C; TISSUE-SPLEEN;
Mages H.W., Hutloff A., Heuck
Oliveri F., Kroczek R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1999 (TrembLrel. 12, Created)
01-NOV-1999 (TrembLrel. 12, Last sequence update)
01-NOV-1999 (TrembLrel. 15, Last annotation update)
ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE
PRECURSOR (CCLP PRECURSOR) (SURFACE PROTEIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-BALB/C; TISSUE-SPLEEN;
Wu D., Giannoni M.A., Kiesecker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Cell surface molecule mediating transmission.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9WVS0;
01-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Molecular cloning and characterization identification of B/h as ICOS ligand."; Eur. J. Immunol. 30:1040-1047(2000). EMBL; AB023132; BAA82126.1; -. EMBL; AF257230; AAF70099.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matis L.A., Rother R.P.; "CCLP, A novel molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tezuka K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE~SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCLP OR ICOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9WVS0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-10090;
                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                               181
                                                                                                                                                                                               121
                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match
                                                                                                                                                                                                                                                                                                                                                        _
                                                    w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                             YMEMAAVNTNKKSRLAGVT
                                                                                                                                      YMFMRAVNTAKKSRLTDVT 197
                                                                                                                                                                                                                V-TLTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGE
                                                                                                                                                                                                                                                                        VICELTKTKGSGNAVSIKNPMLCLYHLSNNSVSFFLNNPDSSQGSYYFCSLSIFDPPPFQ
                                                                                                                                                                                                                                                                                              MEMRAVNTAKKSRLTDVTL
                                                                                                                                                                                             ERNLSGGYLHIYESQLCCQLKLWLPVGCAAFVVVLLFGCILIIWFSKKKYGSSVHDPNSE
                                                                                                                                                                                                                                                                                                                                                                                                                                        11 Similarity
138; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AJ250559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (FEB-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (APR-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tamatani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAB71153.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
22690
                                                                                                                                                                                                                                                                                                                                                                                                                                                     67.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         င်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               that regulates T cell
the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Heuck C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 727; DB 11;
Pred. No. 1.3e-69;
0; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
9B2278E4CAB1DB47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; I
Sciurognathi; Muridae;
            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       · L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Buchner
            200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Faas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
              3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>۳</u>
۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         murine ICOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activation.";
databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Himmelbauer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mickle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AILIM
                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                      2
```

```
RESULT
Q9R1T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
Query Match
Best Local Sin
Matches 134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 138; Conserv
                                                                                                                                                                                                                                                     Q9R1T7
Q9R1T7;
01-MAY-2000
                                                     Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9JL17;
01-OCT-2000
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-INTESTIAL INTRA-EPITHELIUM;
VOShinaga S.K., Whoriskey J.S., Khare S.D., Sarmier Horan T., Shih G., Zhang M., Coccia M.A., Kohno T., Campbell P., Chang D., Chiu L., Dai T., Duncan G., Hui A., McCabe S.M., Scuily S., Shaklee C.L., Van Genaldi G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2000 (TYEMBLYEL: 15, Created)
01-OCT-2000 (TYEMBLYEL: 15, Last sequence update)
01-OCT-2000 (TYEMBLYEL: 15, Last annotation update)
CD28-RELATED PROTEIN 1 (FRAGMENT).
                                                                                                                                 Tezuka K., Tamata
                                                                                                                                                                          Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 0:0-0(2000).
EMBL; AF216748; AAF45150.1;
NON_TER 200 200
                                                                                                Submitted
                                                                                                           "Cell surface molecule transmission.";
                                                                                                                                                                                                                                 01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse Eukaryota; Metazoa;
                                                                                     EMBL; AB023134;
                                                                                                                                                                 NCBI_TaxID-10116;
                                                                                                                                                                                                            PRECURSOR.
                                                                                                                                                                                                                     ACTIVATION-INDUCIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "T-cell
                                                                                                                                                                                                                                                                                                                                                        182
                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                            124
                                                                                                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YF---FLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQILC
                                                                                                                                                                                                                                                                                                                                   MAAVNTNKKSRLAGVT
                                                                                                                                                                                                                                                                                                                                               MRAVNTAKKSRLTDVT 197
                                                                                                                                                                                                                                                                                                                                                                            LSGGYLHIYESQLCCQLKLWLPVGCAAFVVVLLFGCILIIWFSKKKYGSSVHDPNSEYMF
                                                                                                                                                                                                                                                                                                                                                                                       LTGGYLHIYESQLCCQLKFWLPIGCAAFVVCIL-GCILICWLTKKKYSSSVHDPNGEYMF
                                                                                                                                                                                                                                                                                                                                                                                                                        ELTKTKGSGNAVSIKNPMLCLYHLSNNSVSFFLNNPDSSQGSYYFCSLSIFDPPPFQERN
                                                                                                                                                                                                                                                                                                                                                                                                                                   DLTKTKGSGNTVSIKSLKECHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFKV-T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 co-stimulation through
                                                                                     (FEB-1999) to 1
23134; BAA82128
                                                     200
                                                                                                                                 Tamatani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200 AA;
                                                                                                                                                                                                                   (TIEMBLIE1. 13, Created)
(TIEMBLIE1. 13, Last sequence update)
(TIEMBLIE1. 13, Last annotation update)
(NDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE AILIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Mouse)
                                                     AΑ;
                                                                                                                                .
T:;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                     20
22529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22709
          64.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67.18;
                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                     mediating
                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW;
                                                     MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 695.5;
Pred. No. 2.9e
17; Mismatches
                                                                                              EMBL/GenBank/DDBJ
                                                     POTENTIAL.
0A74C35581F129D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata;
                                                                                                                                                                          Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   87D97F0DC44ADCA7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B7RP-1
                                                                                                                     cell
                                                                                                                                                                                                                                                                           200
                                                                                                                     adhesion and signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and ICOS.";
                     DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sarmiento U., Guo J., ohno T., Tafuri-Bladt can G., Elliott G.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G., Mak T.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                     Length
                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                            Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200;
                      200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus
                                                                                                                                                                            Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                            183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63
                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
```

Similarity 68.4 34; Conservative

17;

.9e-66;

40;

5

Gaps

Ψ

읓

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein -
         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
         155.5

141.5

141.5

136.5

105.5.5

82.5

82.5

82.5

82.5

82.7

70.5

71.5

72.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5

73.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length:
         122.51.13.64
122.51.13.61.12.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.61.13.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              May 30, 2001, 16:49:48; Search time 9.54 Seconds (without alignments) 710.963 Million cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-509-283-2
1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MKSGLWYFFLFCLRIKVLTG....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20000000000
                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CD28_RAT
CD28_RABIT
CD28_MOUSE
CD28_HUMAN
CD28_BOVIN
CD28_CHICK
CTL4_MOUSE
CTL4_HUMAN
VGL2_EBV
OM40_DROME
GRB_MOUSE
GRB_RAT
GRB_HUMAN
YD84_YEAST
CRFB_MOUSE
A1AD_MOUSE
BXEN_CLOBU
SCRB_LIMPO
YL53_YEAST
FCGA_HUMAN
VGL2_IBVD2
                                                                                                                                                                                                                                                                                                                                                          FCG2_MOUSE
YJ9G_YEAST
CCPH_HSVSA
CCFB_SHEED
PTK7_HUMAN
FCGC_HUMAN
BCN1_MOUSE
BCN1_HUMAN
FCG3_MOUSE
CATC_MOUSE
CATC_AMBD
CT14_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 4.5
Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ....YMFMRAVNTAKKSRLTDVTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93435
      088597

088597

P08508

P07821

P03749

P42072

09u416

P48168

P48167

Q12359

Q12359

Q12359

Q123586

Q25386

Q2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P47170
Q01016
Q01557
Q28557
Q13308
P31995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P42069 oryctolagus
P31041 mus musculu
P10747 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P31042 rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 bos taurus
3 gallus gall
3 mus musculu
0 homo sapien
0 homo sapien
                              4 mus musculu
6 clostridium
6 limulus pol
7 saccharomyc
8 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                  O saccharomyc
C herpesvirus
7 ovis aries
7 ovis aries
8 homo sapien
5 homo sapien
7 mus musculu
7 homo sapien
8 mus musculu
1 mus musculu
1 mus musculu
9 bacteriopha
                                                                                                                                                                                                                                     8 mus musculu
1 rattus norv
7 homo sapien
                                                                                                                                                                              mus musculu
                                                                                                                                                                                                                                                                                                                           oryctolagus
drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 updates/sec
```

SPITTITT	Z & Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	RESULT CD28_R ID C AC P AC	
EMBL PIR; Immu SIGN CHAI DOMA TRAN DOMA CARB CARB CARB	STRA. MEDL. Clari "Iden "Iden Immu -!!!- This between the use enti- or si	RAT CD28 P310 01-J1 01-J1 01-J1 01-J2 01-O2 T-CEE CD28 Rattt Euka	335 34 35 35 35 35 35 35 35 35 35 35 35 35 35
; X5528 S38722 noglobu AL IN IN IN IN OHYD OHYD OHYD OHYD OHYD OHYD OHYD OHYD	ENCE IN=D IN=D IN=D IN=D IN=D IN=D IN=D IN=D	LT 1 PAT PAT CD28_RAT S 31042; 01-JUL-1993 (Rel 01-JUL-1993 (Rel 01-OCT-1996 (Rel T-CELL-SPECIFIC CD28. Rattus norvegicu Bukaryota; Metaz Mammalia; Euther NCBI_TaxID=10116	71.5 71.5 71.7 71.7 71.7 71.7 71.7 70.5 70.5 70.5 70.5
8; CAA3900 ; S38722. lin domain 1 1 20 21 20 15 151 17 178 21 179 21 29 13 72 7 93 9 1106 10 130 13 218 AA; 2	FROM N.A. TISSUE-Lymp 92104640; PubM 921046400; PubM 92104	T STAN 1993 (Rel. 2 1993 (Rel. 2 1996 (Rel. 3 1996 (Rel. 3 SPECIFIC SUR norvegicus (tale tale tale tale tale tale tale tale	
11 1211 2 1:0	1. A. 1. A. 1. A. 1. B. 1. PubMed-1309509 1. Of a CDNA encodi 35:54-57(1992) 35:54-57(1992) 35:54-57(1992) 35:54-57(1992) 35:54-57(1992) 35:54-77(1992) 35:54-77(1992) MODIMER, LINKED B LOCATION: TYPE I BELONGS TO THE I BELONGS TO	DARD; 6, Cr 6, La 4, La EACE (EACE). Chor Rode	1163 2768 329 372 372 524 634 1051 322 466 520 550 551
о м	130; 130; 139; NVOI 10.7; 10.7	D; Created) Last seq Last ann E GLYCOP Ordata; dentia;	
tein; Signal; ITY. CIFIC SURFACE LAR (POTENTIAL). C (POTENTIAL). TYPE DOMAIN. GLCNAC) (9; IN T-CELL ACTIVATION IN T-CELL ACTIVATION BY A DISULFIDE BOND. IMMUNOGLOBULIN SUPER IMMUNOGLOBULIN SUPER ILIUMENT TI SPRONUCED BLOINFORMATICS and LICHE There are not removed. Usage ement (See http://wsib.ch).	PRT; 218 AA. plence update) potation update) pROTEIN CD28 PRECURSOR. Craniata; Vertebrata; Sciurognathi; Muridae;	VGL2_IBV6 THYG_HUMAN CD86_HUMAN CYB_TRYBO VL1_HPV58 YCX3_EUGGR PTK7_CHICK CRFB_HUMAN A1AA_RABIT VGL2_IBVU3 A1AD_RAT ALIGNMENTS
Transmembra GLYCOPROTEI) POTENTIAL). POTENTIAL). POTENTIAL). POTENTIAL).	on. BINDS TO B7-1 ON. BINDS TO B7-1 	Euteleostomi; Murinae; Rattus.	P05135 avian infec P01266 homo sapien P42081 homo sapien Q33568 trypanoplas P26535 human papil P31916 euglena gra Q91048 gallus gall P34387 homo sapien Q02824 oryctolagus P30207 avian infec P17662 avian infec P23944 rattus norv

Query Match 14.4 Best Local Similarity 25.8 Matches 40; Conservative

14.4%; 25.8%; 29;

Score 155.5; Pred. No. 3.1e 29; Mismatches

.1e-08; es 67; DB 1;

Length Indels

218; 19;

Gaps

7;

Š

Š

```
RESULT 2
CD28_RABIT
                                                                    Matches
                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1995
01-NOV-1995
01-OCT-1996
                                                                                                                                                                                                                                          TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                               CARBOHYD
SEQUENCE
                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Exthe European Bioinformatics Institute. There are no restructe by non-profit institutions as long as its content use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eu
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-CCT-1996 (Rel. 34, Last annotation update)
T-CELL-SPECIFIC SURFACE GLYCOPROTEIN CD28 P
                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=B/J X CHBB:HM;
MEDLINE=95369849; Pub
                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P42069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CD28_RABIT
                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                  Immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                    EMBL; D49841; BAA08641.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Cloning and sequencing of the rabbit gene encoding T-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID: 9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sono
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                147 SPKLFWPLVVVAGVLLCYGLLVTVTLCIIWTNSRR 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87
29
                                       30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY TO CTLA-4
      MLVVNNNEVNLSCKYTYNLFSKEFRASLYKGADSAVEVCVVNGNFSHPHQFHSTTGFN--
                                   MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGS-----GNTVSIKSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CQLKFWLPIGCAAFVVC--ILGCILIC--WLTKKK 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LLVVDNNEVSLSCRYSYNLLAKEFRASLYKG--VNSDVEVCVGNGNFTYQPQFRPNVGFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MFIFHNGGVQILCKYPD--IVQQFKMQLLKGGQILCDLTKTKGSGNTVSIKSLK-----F
                                                                  Similarity 23.3
39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seto
                                                                                                                                               20
151
178
29
38
72
72
93
106
130
221 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cuniculus (Rabbit).
Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Α.,
                                                                                                                                                                                                                                                                                                                                                    domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                        150
177
221
138
38
72
72
93
106
130
25307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed~7642234;
                                                                                                                                                                                                                                                                                                                      221
                                                                                   13
23
                                                                                                                                                                                                                                                                                                                                                    T-cell;
                                                                                 . 28;
                                                                                                                                                  X
W
X
                                                                  26;
                                                               Score 147; DB
Pred. No. 2.1e
26; Mismatches
                                                                                                                                           N-LINKED (GLCNAC...) (POTENTIAL).
3DF652C9CFC14F13 CRC64;
                                                                                                                                                                                                                                                     EXTRACELLULAR (POTENTIAL) POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                     T-CELL-SPECIFIC
                                                                                                                                                                                                                                        IG-LIKE V-TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                     Glycoprotein; Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CD28 PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     221
                                                                                 DB 1;
.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                     SURFACE GLYCOPROTEIN
                                                                                                                                                                                                                                                                                                                                                  Signal;
                                                                                              Length 221;
                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               by and
                                                                                                                                                                                                                                                                                                                                                Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
tent is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL outstation
                                                                  42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                  Gaps
                                   80
      86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                                                                                                             5 G
                                                                                                                                                                                                                                                                                                                                                                                                                                          its
                                                                  7;
```

SEEEBBS

Ş В Š DЬ

밁

5 20

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
CD28_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
SEQUENCE
                                                                    TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1993
01-JUL-1993
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CD28_MOUSE P31041;
                                                                                                                                                               PIR;
                                                                                                                                                                                                                    modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                       -i- SUBUNIT: HOMODIMER, LINKED BY A DISULFIDE BOND.
-i- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-i- SIMILARITY: BELONGS TO THE IMMUNOGLOBULIN SUPERFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                  in both mouse and human as to sequence, message expression, structure, and chromosomal location.";
J. Immunol. 147:1037-1044(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 156-218 FROM N.A. SEQUENCE OF 156-218 FROM N.A. MEDLINE:91318145; PubMed:1713603; PubMed: E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-90217534; PubMed-2157764;
Gross J.A., St John T., Allison J.P.;
"The murine homologue of the T lymphocyte
cloning and cell surface expression.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUL-1993 (Rel.
01-OCT-1996 (Rel.
T-CELL-SPECIFIC SU
                                                                                                                                                                                      EMBL; M34563; AAA37395.1; EMBL; M74361; AAA37396.1;
                                                                                                                                                                                                                                                       the European Bioinformatics Institute. The use by non-profit institutions as long
                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a c
between the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CD28
                                                                                                       DOMAIN
                                                                                                                              CHAIN
                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                            -i- FUNCTION: POSSIBLY INVOLVED AND B7-2 (B70).
                                                                                                                                                                                                                                                                                                                                                                                                                                 Golstein P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                    "CTLA-4 and CD28 activated lymphocyte molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                     mmunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Immunol. 144:3201-3210(1990).
                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS
SIMILARITY TO CTLA-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPF--KVTLTGGYLHIYESQLC--
                                                                                                                                                               A43523; A43523.
MGI:88327; Cd28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HPSPKSSTLFW------VLVVVGAVLAFYSMLVTVALFSCWMKSKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --CDGKLGNETVTFYLKNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEQHFCPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----CQLKFWLPIGCAAFVVCILGCILI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s (Mouse).
Metazoa; Chordata; C
Metazoa; Rodentia; S
                        20
151
178
29
72
93
106
130
                                                                                                                                                     domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SURFACE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26,
34,
                        150
177
218
138
138
72
93
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
ICE GLYCOPROTEIN CD28 PRECURSOR
                                                                                                                                                    T-cell;
  ¥.
                              POTENTIAL.
CYTOPLASMIC (POTENTIA
IG-LIKE V-TYPE DOMAIN
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
             N-LINKED
                                                                                                                                       BY SIMILARITY.
                                                                                                      EXTRACELLULAR (POTENTIAL)
                                                                                                                             T-CELL-SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
  T -> SDY (IN REF
A491439DD7E8FD7F
                                                                                                                                                                                                                                                                                                                                                                        IN T-CELL ACTIVATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Mattei M.-G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        218
                        (GLCNAC
                                                                                                                                                                                                                                 (See http://www.isb-sib
        (IN REF
                                                                                                                                                                                                                                                                   There are no
                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antigen CD28.
                                                                                                                                                                                                                                                        as
                                                                    DOMAIN
                                                                                                                                                                                                                                          Usage
                                                                                                                             SURFACE
                                                                                                                                                                                                                                                      its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -CWLTKKK
                                                                                                                                                                                                                                                                                                                                                                                                                     are closely related
                                                                                                                                                                                                                                                                                                                                                                                                                                         Luciani M.F.,
                      (POTENTIAL)
                                  (POTENTIAL).
                                                         (POTENTIAL)
                                                                                                                             GLYCOPROTEIN
                                                                                                                                                                                                                                                                    restrictions on
                                                                                                                                                                                                                                                                                                                                                                        BINDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    167
                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecular
                                                                                                                                                                                                                                                                                                                            STRONGEST
                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                        ō
                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                               collaboration -
                                                                                                                                                                                                                                  .ch/announce/
                                                                                                                                                                                                                                                        in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
     5
6
7
10
11
                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seg length:
seg length:
                                                                                                                                                                                                           Match
                                                                                                                                                                                                                           Query
                                                                                                                                                                                                                                                                                                                                                                  10:
11:
12:
13:
14:
15:
16:
16:
17:
18:
19:
20:
   76.8
76.8
76.8
76.8
8.6
8.6
8.1
8.1
8.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     May 30, 2001, 16:52:04; Search time 19.85 Seconds (without alignments) 570.192 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A_Geneseq_0401:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-509-283-2
198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                         /SIDS6/gcgdata/geneseq/geneseqp/AA1990.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1992.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1994.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1990.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1991.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MKSGLWYFFLFCLRIKVLTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS6/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1988.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1989.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /SIDS6/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1982.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /SIDS6/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDS6/gcgdata/geneseq/geneseqp/AA1984.DAT:*
                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seqs, 57163235 residues
 198
199
199
199
199
200
216
200
200
200
                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chosen
                                                                                                                                                                                                              H
                                 Y92213
W75956
W75957
Y08026
B08731
W71874
W71875
W75958
                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ...YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   390729
Amino acid sequenc
Rat cell surface p
Rat cell surface p
Mouse cell surface
Amino acid sequenc
Murine Th2-specifi
Mouse brain natriu
                                                                                                                                                                                                           Description
                                                                                                                       Human cell surface
Human activated T-
                                                                                                                                                         Human cell
                                                                                                                                                                       Human Th2-specific
                                                                                                                                                         surface
```

IgE CH4 region con	0	16	24	3.0	σ	G
3	Y70332	21	22		0	
e e	W14427	18	22	•	6	ω
ΙgΕ	R37812	14	22		o	~
Calycin conserved	Y97275	21	15	•	0	_
nine re	R81459		12	٠	σ	٥
Human IgE CH4 regi	R82570	16	12	3.0	0	Ψ
Histamine releasin	R08334		12	٠	σ	ш
Immunoglobulin E e	B20877	21	11		0	7
Residues 496-506 o	R90709	17	11	3.0	σ	O1
peptide	B51040	22	10	٠	0	٠.
н	Y80052	21	10	•	σ	_
Immunoglobulin E e	в20876		10		0	ω
Immunoglobulin E e	в20866	21	10	•	σ	
Human IgE heavy ch	W14426	18	10	٠	σ	_
s.	W27058	18	10	•	6	Ö
Histamine releasin	R90708	17	10	٠	0	_
tamine releasi	R81455	17	10	٠	σı	ω
otif contg.	R88818		10	٠	თ	7
C-ep	R83187		10		6	٠.
t cel	R52950		10	٠	6	٠.
IgE CH4 hapten. F	R65358	15	10		6	_
- Igi	R37811		10		6	_
yntheti	R37367		10		6	.~
H	R81458	17	Q.	٠	6	,
releas	R81457	17	9	٠	6	_
Histamine releasin	R08311	11	9	•	6	•
tamine releas	R08312	11	9	٠	σ	~
re	R81456		8	٠	6	_
Ð	R08310		œ	٠	6	٠.
tha	G59943	21	209	•	7	٠.
Arabidopsis thalia	G14014	21	209	3.5	7	_
nce encoded	-		170	٠	7	w
Mouse brain natriu	R54670	15	120	•	7	٠

 $\begin{array}{c} 118 \\ 120 \\ 221 \\ 222 \\$

ALIGNMENTS

Human Th2-specific 10-AUG-2000 Y92213;

polypeptide, h1228.

(first entry)

Y92213 standard; Protein; 198

B

```
PRX TYPE
07-OCT-1998;
                                                                                                                                                                                                                     h1228; Th2-specific; T helper cell; anti-inflammatory; antiarthritic; CD28; antidiabetic; immunosuppressive; neuroprotective; dermatological; antipsoriatic; antiasthmatic; antiallergic; anti-viral; opthalmalogical; CLTA-4; nephrotropic; anti-HIV; antibacterial.
                     06-OCT-1999;
                                           13-APR-2000
                                                                 WO200019988-A1
                                                                                                                                  Peptide
                                                                                                                                                                             Key
                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                 Peptide
98US-0168229
                     99WO-US23156
                                                                                                                                                                 Location/Qualifiers 113..118
                                                                                    /note= "common in CD28 and CTLA-4; necessary for
CD28-mediated phosphatidylinositol 3-kinase
activity"
                                                                                                                      178..181
/label= YXXM_motif
                                                                                                                                          /label= conserved_PPP_motif
/note= "common in CD28 and CTLA-4"
```

```
W7
                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 288888882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   suppressing airway inflammation or hyperresponsiveness in a mammal comprises administering a Th2-specific polypeptide of the invention, an antibody to such a polypeptide or allelic variants of the genes. The novel DNA and polypeptide sequences are useful for treatment and diagnosis of Th cell and Th cell-like disorders such as Crohn's diseases arthritis, insulin dependent diabetes, autoimmunity, multiple sclerosis, dermatitis, psoriasis, graft rejection, graft versus host diseases, sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis, viral infections (including human immunodeficiency virus (HIV)), bacterial infections, bronchitis, cystic fibrosis, diptheria, membranes and infections, overtice fibrosis, diptheria,
                                                                                                                           Human;
signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T helper (Th) 2 nucleic acids and encoded proteins, useful for the diagnosis and treatment of immune and respiratory disorders such as Crohn's diseases, arthritis, insulin dependent diabetes and
27-FEB-1998;
                           03-SEP-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This Th2-specific polypeptide, which has similarity to human human CTLA-4 is encoded by human orthologue h1228.
                                                      W09838216-A1
                                                                                Homo sapiens
                                                                                                              mitogen-stimulated.
                                                                                                                                                                    Human cell surface protein #1.
                                                                                                                                                                                                 11-DEC-1998
                                                                                                                                                                                                                             W75956;
                                                                                                                                                                                                                                                     W75956 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            emphysema,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A novel method for modulating a Th2 response, an immune response,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 16; Page 138-139; 159pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     autoimmunity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; A09056.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-303619/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lehar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-FEB-1999;
06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                        _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ
                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                       . VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV 152
                                                                                                                                                                                                                                                                                                                                                                             ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                        cell surface protein; thymocyte; lymphocyte; cell adhesion; transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Manning S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pneumonia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 198 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0258670.
99US-0413136.
98WO-JP00837
                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Legionnaires disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Coyle AJ,
                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 152; DB 21;
Pred. No. 3.5e-149;
                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gutierrez-ramos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٦,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CD28 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or
C
                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
AC XXX AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence represents a human cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPF in its extracellular region and the sequence YMEM in its intracellular region. The cell surface protein can be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                                                                                                                                                                                                                                                  Human; cell surface protein; thymocyte; lymphocyte; cell adhesion; signal transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cell surface molecule expressed in thymocytes and lymphocytes an mediating signal transmission and cell adhesion, and antibodies it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                              mitogen-stimulated.
                      26-FEB-1998;
27-FEB-1997;
                                                                                                                                                             03-SEP-1998
                                                                                                                                                                                                                    W09838216-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                        Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W75957 standard; Protein; 199 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 2; Page 99-101; 149pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1998-481144/41.
N-PSDB; V53198.
                                                                                                       27-FEB-1998;
                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tamatani T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-FEB-1998;
27-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \verb|ilcd|| tktkgsgntvsikslk| fchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk|
                                                                                                                                                                                                                                                                                                                                                                                                                                        cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                        surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                      98JP-0062217
97JP-0062290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98JP-0062217.
97JP-0062290.
                                                                                                       98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 152;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.5e-149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
```

0,

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          88888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCC CXXX PTT DRXX CCC CXXX PTT DRXX PTT DXX PTT DX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SS X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9LT
26
                                                                                                                                                                                                                                                                                                                                                                         anticancer; antiviral; anti-asthma; immunomodulator; proliferation; ortokine synthesis; regulatory element; B cell; T cell activation; cytokine synthesis; regulatory element; B cell; T cell-dependent antibody production; treatment; prevention; cancer autoimmune disease; transplant rejection; immune system regulation; imcore system regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the sequence YMFM in its intracellular region. The cell surface protein car be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence represents a human cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cell surface molecule expressed in thymocytes and lymphocytes and mediating signal transmission and cell adhesion, and antibodies to it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T-lymphocyte;
                                                          11-MAY-1998;
23-SEP-1997;
                                                                                                                                                                                                          01-APR-1999
                                                                                                                                                                                                                                                                 WO9915553-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human activated T-lymphocyte protein 8F4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Y08026 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tamatani T, Tezuka K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (NISB ) JAPAN TOBACCO INC
(DEKO-) DEUT
                                                                                                                                                23-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vtltggylhiyesqlccqlkfwlpigcaafvv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIEDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1998-481144/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ilcdltktkgsgntvsikslkfchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Page 101-105; 149pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76.8%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
   KOCH INST ROBERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human;
                                                          98DE-1021060.
97DE-1041929.
                                                                                                                                                98WO-DE02896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8F4; T cell co-stimulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 152; DB 19; 1
Pred. No. 3.5e-149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    adhesion, and antibodi
and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            activated;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

```
RESULT
B08731
ID B0
 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 76.8%; Score 152; DB 20; Best Local Similarity 100.0%; Pred. No. 3.5e-149; Matches 152; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This invention describes a novel human protein, 8F4, and its encoding nucleic acid which co-stimulates T cells and is present on activated CD4+ and CD8+ T cells but not on resting or activated B cells, granulocytes, monocytes, natural killer or dendritic cells. 8F4 has anticancer, antiviral, anti-asthma and immunomodulatory activity. 8F4 provides a strong co-stimulatory signal for T cell activation, i.e. it amplifies proliferation of T cells, synthesis of certain cytokines and other regulatory agents, and improves T cell-dependent antibody production by B cells. Agents that inhibit 8F4 are used to treat or prevent autoimmune diseases, to prevent transplant rejection and to treat disorders of immune system regulation. 8F4, or cells that express it, is/are used to treat or prevent cancers, acquired immune deficiency syndrome, asthma and chronic infectious diseases (e.g. hepatitis B or C).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           activated
             Domain
                                         Domain
                                                                                                                                                                                                                CRP1; CD28 related protein-1; B7RP1; B7 related protein-1; T-1ymphocyte activation; type I transmembrane protein; T c
                                                                                                                                                                                                                                                                                         02-JAN-2001
                                                                                                                                                                                                                                                                                                                      в08731;
                                                                                                                                                                                                                                                                                                                                                   B08731 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2; Page 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polypeptide 8F4 co-stimulates T cells and is present only
                                                                                                                                                                                                                                                            Amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BUND ) BUNDESREPUBLIK DEUT PAUL-EHRLICH-INST
                                                                                                                                                                        Homo sapiens.
                                                                                               Protein
                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                    cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999-276975/23
DB; X37661.
                                                                                                                                                                                                                                                                                                                                                                                                                        VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ilcdltktkgsgntvsikslkfchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk 120
                                                                                                                                                                                                    proliferation; T-cell mediated disorder.
                                                                                                                                                                                                                                                          sequence of a human CRP1 polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                 /note= "
21..199
            /note= "
162..199
                                         /note= "
                                                                     21..140
                                                                                                                                           Location/Qualifiers
                                                                                  /note-
                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47pp; German.
                                                                                                             "signal peptide
"intracellular domain'
                         "predicted transmembrane
                                                     "extracellular domain"
                                                                                  "mature protein"
                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                   A
                           domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                   T cell activation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

```
RESULT
W71874
ID W71874
AC W7

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence represents a CRP1 (CD28 related protein-1) polypeptide. The specification also describes a B7RP1 (B7 related protein-1) polypeptide. The polypeptides are involved in T-lymphocyte activation, and represent a receptor-ligand pair. CRP1 and B7RP1 are predicted to be a type I transmembrane protein. The nucleic acids are useful for regulating T cell activation or proliferation in an animal. The polypeptides are useful for treating, preventing ameliorating or diagnosing a T-cell mediated disorder in an animal. They can also be
                                                                                    W09838216-A1
                             03-SEP-1998
                                                                                                                                                                                                                     Rat; cell surface protein; thymocyte; lymphocyte; cell adhesion;
signal transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 13A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-FEB-1999;
08-MAR-1999;
                                                                                                                                      Rattus sp.
                                                                                                                                                                                              mitogen-stimulated.
                                                                                                                                                                                                                                                                                                          Rat cell surface protein #1
                                                                                                                                                                                                                                                                                                                                                                     11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                            W71874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 W71874 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel nucleic acids encoding the proteins CRP-1 and B7RP1 are useful in the treatment, prevention and diagnosis of T cell mediated disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; A64558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yoshinaga SK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (AMGE-) AMGEN INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-JAN-2000; 2000WO-US01871.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200046240-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to identify test molecules that bind to the polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-543476/49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 {\tt ilcdltktkgsgntvsikslkfchsqlsnnsvsfflynldhshanyyfcnlsifdpppfk}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199 AA;
                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0244448.
99US-0264527.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 152;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 21; I
3.5e-149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT
W71875
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence represents a rat cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the sequence YMEM in its intracellular region. The cell surface protein contains be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cell surface molecule expressed in thymocytes and lymphocytes are mediating signal transmission and cell adhesion, and antibodies it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                    Rat; cell surface protein; thymocyte; lymphocyte; cell adhesion; signal transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                                                                                                                                                                                                                                                             W71875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                               Tamatani T,
                                                                                                 26-FEB-1998;
27-FEB-1997;
                                                                                                                                        27-FEB-1998;
                                                                                                                                                                03-SEP-1998.
                                                                                                                                                                                       W09838216-A1
                                                                                                                                                                                                                  Rattus sp
                                                                                                                                                                                                                                        mitogen-stimulated.
                                                                                                                                                                                                                                                                                                                    11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                     W71875 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 9; Page 106-109; 149pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tamatani T,
                                                                        (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                                                                                                                                           Rat cell surface protein #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NISB ) JAPAN TOBACCO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-FEB-1998;
27-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                               62 lcdltktkgsgntvsik 78
                                                                                                                                                                                                                                                                                                                                                                                                                                               62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1998-481144/41.
DB; V61357.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                Tezuka K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tezuka K;
                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                 98JP-0062217.
97JP-0062290.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98JP-0062217.
97JP-0062290.
                                                                                                                                        98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98WO-JP00837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.68;
                                                                                                                                                                                                                                                                                                                                                                      216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 19;
1.2e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
```

N-PSDB; V61358

WPI; 1998-481144/41

0;

```
RESULT
W75958
      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 17
The present sequence represents a mouse cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence represents a rat cell surface protein which is expressed by thymocytes and by mitogen-stimulated lymphocytes. The cell surface protein induces adhesion of mitogen-stimulated lymphocytes to antibodies recognising the cell surface protein. These antibodies also produce an increase in peripheral blood lymphocytes in the presence of an antibody recognising CD3 antigen. The cell surface protein contains the amino acid sequence FDPPPF in its extracellular region and the sequence FMEM in its intracellular region. The cell surface protein can be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                                                                                        Cell surface molecule expressed in thymocytes and lymphocytes mediating signal transmission and cell adhesion, and antibodic it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cell surface molecule expressed in thymocytes and lymphocytes and mediating signal transmission and cell adhesion, and antibodies to it useful in treatment of auto:immune and allergic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mitogen-stimulated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mouse; cell surface protein; thymocyte; lymphocyte; cell adhesion; signal transmission; autoimmune disorder; allergy; diagnosis;
                                                                                                              Claim
                                                                                                                                                                                                       N-PSDB;
                                                                                                                                                                                                                                                  Tamatani
                                                                                                                                                                                                                                                                                                               26-FEB-1998;
27-FEB-1997;
                                                                                                                                                                                                                                                                                                                                                            27-FEB-1998;
                                                                                                                                                                                                                                                                                                                                                                                           03-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                        W09838216-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W75958 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                 (NISB ) JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity les 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                                                                                                     1998-481144/41.
                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9;
                                                                                                                                                                                                       V53200
                                                                                                        Page 110-112; 149pp; Japanese.
                                                                                                                                                                                                                                                  ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 112-115; 149pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         216 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                  Tezuka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                 TOBACCO INC
                                                                                                                                                                                                                                                                                                              98JP-0062217.
97JP-0062290.
                                                                                                                                                                                                                                                                                                                                                            98WO-JP00837.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.3e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                        antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                is
cell
to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
RESULT
B08723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SSSSSS
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
The present sequence represents a CRP1 (CD28 related protein-1) polypeptide. The specification also describes a B7RP1 (B7 related protein-1) polypeptide. The polypeptides are involved in T-lymphocyte activation, and represent a receptor-ligand pair. CRP1 and B7RP1 are predicted to be a type I transmembrane protein. The nucleic acids are useful for regulating T cell activation or proliferation in an animal
                                                                                                              Novel nucleic acids encoding in the treatment, prevention
                                                                                                                                                                                                                             03-FEB-1999;
08-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRP1; CD28 related protein-1; B7RP1; B7 related protein-1; T-lymphocyte activation; type I transmembrane protein; T cell proliferation; T-cell mediated disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   в08723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B08723 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the amino acid sequence FDPPPF in its extracellular region and the sequence YMFM in its intracellular region. The cell surface protein be used in the prevention and treatment of autoimmune and allergic diseases, and in the diagnosis and investigation of such disorders.
                                                                              Claim 11;
                                                                                                                                                 N-PSDB;
                                                                                                                                                            WPI; 2000-543476/49
                                                                                                                                                                                 Yoshinaga
                                                                                                                                                                                                                                                              27-JAN-2000; 2000WO-US01871
                                                                                                                                                                                                                                                                                                           WO200046240-A2
                                                                                                                                                                                                                                                                                                                                            Domain
                                                                                                                                                                                                                                                                                                                                                                                        Domain
                                                                                                                                                                                                                                                                                                                                                                                                              Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                     10-AUG-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125 GGYLHIYESQLCCQLK 140
|||||||||||||||
126 ggylhiyesqlccqlk 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    зp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                 A64554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                 SK;
                                                                              Fig 1A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence of a murine CRP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AΑ;
                                                                                                                                                                                                                             99US-0244448
99US-0264527
                                                                                                                                                                                                                                                                                                                                          /note= "p
164..200
                                                                                                                                                                                                                                                                                                                                                                  /note= "(
146..163
                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
1..20
                                                                                                                                                                                                                                                                                                                                                                                         21..145
                                                                                                                                                                                                                                                                                                                                                                                                                         /note=
                                                                                                                                                                                                                                                                                                                                                                                                   /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein;
                                                                             174pp;
                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                      "signal peptide'
                                                                                                                                                                                                                                                                                                                                                                            "extracellular domain"
                                                                                                                                                                                                                                                                                                                                                                                                 "mature protein"
                                                                                                                                                                                                                                                                                                                                  "intracellular domain"
                                                                                                                                                                                                                                                                                                                                                      "predicted transmembrane
                                                                              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                               the
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                               proteins CRP-1 and B7RP1 are diagnosis of T cell mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 19; 1
1.3e-08;
                                                                                                                                                                                                                                                                                                                                                        domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell activation;
                                                                                                                           are useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 can
```

```
Y92212
ID Y92212 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                    07-OCT-1998;
26-FEB-1999;
06-OCT-1999;
This Th2-specific polypeptide is encoded by a murine orthologue m1288. The protein shares homology with both human and murine CD28 and CTLA-4. A novel method for modulating a Th2 response, an immune response, or suppressing airway inflammation or hyperresponsiveness in a mammal comprises administering a Th2-specific polypeptide of the invention, an antibody to such a polypeptide or allelic variants of the genes. The
                                                                                                                                   T helper (Th) 2 nucleic acids and encoded proteins, useful for the diagnosis and treatment of immune and respiratory disorders such a Crohn's diseases, arthritis, insulin dependent diabetes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The polypeptides are useful for treating, preventing ameliorating diagnosing a T-cell mediated disorder in an animal. They can also used to identify test molecules that bind to the polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                m1288; Th2-specific; T helper cell; anti-inflammatory; antiarthritic;
CD28; antidiabetic; immunosuppressive; neuroprotective; dermatological;
antipsoriatic; antiasthmatic; antiallergic; anti-viral; opthalmalogical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-AUG-2000
                                                                                                                                                                                                                                 Lehar
                                                                                                                                                                                                                                                                                                                                         06-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                   13-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                            WO200019988-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTLA-4; nephrotropic; anti-HIV; antibacterial.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Murine Th2-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                           (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125 GGYLHIYESQLCCQLK 140
||||||||||||||||
126 ggylhiyesqlccqlk 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                       2000-303619/26.
                                                                                                                                                                                                                                 ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Th2-specific;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
16; Conserv
                                                                                                                                                                                            A09054
                                                                                                                                                                                                                               Manning S,
                                                                                              Page 130-131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         200 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                  98US-0168229.
99US-0258670.
99US-0413136.
                                                                                                                                                                                                                                                                                                                                         99WO-US23156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= conserved_PPP_motif
/note= "common in CD28 and (
181...184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers 114..119
                                                                                                                                                                                                                                                                                                                                                                                                                                                               'label- YXXM_motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polypeptide, m1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8.1%;
                                                                                                                                                                                                                                 Coyle AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                     "common in CD28 and CTLA-4; necessary for
CD28-mediated phosphatidylinositol 3-kinase
activity"
                                                                                            159pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
                                                                                              English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                 Gutierrez-ramos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 21,
3. 1.3e-08;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and CTLA-4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $\times CCCC\times \times \tim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Matc
Best Local
                                                                                                                                               Mouse BNP (
of BNP in a
BNP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         novel DNA and polypeptide sequences are useful for treatment and diagnosis of Th cell and Th cell-like disorders such as Crohn's disease arthritis, insulin dependent diabetes, autoimmunity, multiple scleros dermatitis, psoriasis, graft rejection, graft versus host diseases, sarcoidosis, asthma, allergies, conjunctivitis, glomerular nephritis, viral infections (including human immunodeficiency virus (HIV)), bacterial infections, bronchitis, cystic fibrosis, diptheria, emphysema, pneumonia, and Legionnaires disease.
                                                                                                                                                                                                                                                                                                 Mouse brain natriuretic peptide - useful determination of BNP
                                                                                              Sequence
                                                                                                                                                                                                                                              Disclosure; Page 7-8; 9pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                       N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brain natriuretic peptide; BNP; detection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mouse brain natriuretic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1994-163940/20
                                                                                                                                                                                                                                                                                                                                                                                                                                               (SHIO ) SHIONOGI & CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-APR-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JP06107688-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R54669;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R54669 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 GGYLHIYESQLCCQLK 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        126 ggylhiyesqlccqlk 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
16; Conserv
                                                                                                                                                                                                                                                                                                                                                                       Q65357
                                                                                                                                                                      can be used for the detection and the determination a sample and for the prepn. of various reagents con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92JP-0259488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note: "Ser(-50)-Leu(45); claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note: "Met(-75)-Leu(45); claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /label∵ mat_protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    LTD.
                       3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
Score 7; |
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
DB 15;
5. 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21;
1.3e-08;
                                                                                                                                                                                                                                                                                                                         for the detection and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                       Length 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 200,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ű
                                                                                                                                                                         reagents contg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    's diseases, sclerosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

Matches

Similarity 7; Conserv

Conservative

0;

Mismatches

0,

0

Gaps

0

100.0%;

```
δÃ
ş
                                                                                                                                                                                             RESULT 12
R54670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                        RESULT 13
P20107
                                                                                                  밁
                                                                                                                            Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                              Mouse BNP can be used for the detection and the determination of BNP in a sample and for the prepn. of various reagents contg
                                                                                                                                                                                                                                                                                                                              Protein
                                                                                                                                                                                                                                                                                                                                                  Кеу
                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                             Brain natriuretic peptide; BNP; detection.
Homo sapiens
            Viral infection; therapy; malignancy.
                         Sequence encoded
                                       10-AUG-1992
                                                     P20107;
                                                                                                                                                            Sequence
                                                                                                                                                                                                   Disclosure; Page 8-9; 9pp; Japanese
                                                                                                                                                                                                                Mouse brain natriuretic peptide - useful for the detection and determination of {\tt BNP}
                                                                                                                                                                                                                                   WPI; 1994-163940/20.
N-PSDB; Q65358.
                                                                                                                                                                                                                                                                    29-SEP-1992;
                                                                                                                                                                                                                                                                                29-SEP-1992;
                                                                                                                                                                                                                                                                                              19-APR-1994.
                                                                                                                                                                                                                                                                                                           JP06107688-A.
                                                                                                                                                                                                                                                                                                                                                                                        Mouse brain natriuretic peptide
                                                                                                                                                                                                                                                                                                                                                                                                      12-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                   R54670;
                                                                                                                                                                                                                                                                                                                                                                                                                                R54670 standard;
                                                                 P20107 standard; Protein; 170 AA.
                                                                                                                                                                                                                                                       (SHIO ) SHIONOGI & CO LTD
                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50 QFKMQLL
                                                                                                  38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                38 qfkmqll
                                                                                                               50 QFKMQLL 56
                                                                                                 qfkmqll 44
                                                                                                                                                             120 AA;
                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56
                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                    92JP-0259488
                                                                                                                                                                                                                                                                                 92JP-0259488
                                                                                                                                                                                                                                                                                                                              /label= sig_peptide
76..120
                                                                                                                                                                                                                                                                                                                                                                                                                                Protein; 120 AA
                                                                                                                                                                                                                                                                                                                       /label= mat_protein
                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                         by leukocyte interferon LeIF E cDNA
                                                                                                                                  3.5%;
                                                                                                                           s; Score 7; DB 1
s; Pred. No. 17;
0; Mismatches
                                                                                                                                  DB 15;
o. 17;
                                                                                                                           0;
                                                                                                                                        Length 120;
                                                                                                                            Indels
                                                                                                                            0,
                                                                                                                           Gaps
                                                                                                                            0
                                                                                                                                                                                В
                                                                                                                                                                                                                                          ρ
```

```
RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 7; Conserv
 25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-APR-1981;
01-JUL-1980;
08-SEP-1980;
10-NOV-1980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The inventors claim a polypeptide comprising the AA sequence of a mature human LeIF and a DNA sequence encoding it. LeIF A-D, F, H-J and encoding DNA are specifically claimed. They are natural allelic variations. LeIF is isolated from the leukocytes of humans with chronic myelogenous leukaemia, induced to produce interferon with sendai or Newcastle disease virus; esp. the cell line KG-1.
                                                                                                                                                                                       Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana protein fragment SEQ ID NO: 13719.
                                                                                                                                                                                                                                                                                                                                           17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                G14014;
                                                                                                                                                                                                                                                                                                                                                                                                                   G14014 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mature human leukocyte interferon polypeptide(s) - microbes transformed with appropriate DNA sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1982-04460E/03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goeddel DVN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUL-1981;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GB2079291-A
                                                                            25-FEB-2000;
                                                                                                                 06-SEP-2000
                                                                                                                                                  EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example; Fig 4; 20pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-PSDB; N20094.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HOFF ) HOFFMANN-LA ROCHE AG (GENE-) GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-JAN-1982.
                                                                                                                                                                                                                              termination
                                                                                                                                                                                                                                                                 Protein identification; signal transduction pathway; metabolic pathway;
                                                                                                                                                                                                                                              hybridisation assay;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163 LTKKKYS 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135 ltkkkys 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.5%; Score 7; DB larity 100.0%; Pred. No. 23 Conservative 0; Mismatches
                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                            2000EP-0301439
99US-0121825.
99US-0123180.
99US-0123548.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pestka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80US-0205578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80US-0164986
80US-0184909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81US-0256204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81GB-0120279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= signal
                                                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     s
                                                                                                                                                                                                                                              genetic mapping;
                                                                                                                                                                                                                                                                                                                                                                                                                     209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 3;
                                                                                                                                                                                                                                              gene expression control;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prepd. from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                              promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

• •	
	ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
** A PR - 1     ** A PR -	MAI MAI API API API
$\begin{array}{c} + + + + + + + + + + + + + + + + + + +$	
	800 800 800 800 800 800 800 800 800
	000000000000
43332964468771111000035955567777765825222253225252525252525252525252525252	5788 6264 6785 7462 7462 7462 7462 7462 7462 7462 7462
ר קר	קים המים המים המים המים המים המים המים המ
$\begin{smallmatrix} & & & & & & & & & & & & & & & & & & &$	
UTUTUTUTUTUTUTUTUTUTUTUTUTUTUTUTUTUTUT	
, + + + + + + + + + + + + + + + + + + +	1999
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00000000000000000000000000000000000000
\$\times \times \	
**************************************	444444444

```
RESULT
G59943
   밁
                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 7
 25-FEB-1999

05-MAR-1999

09-MAR-1999

23-MAR-1999

25-MAR-1999

29-MAR-1999

01-APR-1999

06-APR-1999

16-APR-1999

16-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                           18-OCT 1999
21-OCT 1999
22-OCT 1999
22-OCT 1999
25-OCT 1999
25-OCT 1999
25-OCT 1999
26-OCT 1999
26-OCT 1999
26-OCT 1999
26-OCT 1999
27-OCT 1999
28-OCT 1999
28-OCT 1999
28-OCT 1999
29-OCT 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-OCT-1999;
08-OCT-1999;
12-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-OCT-1999;
14-OCT-1999;
14-OCT-1999;
18-OCT-1999;
                                                                                                                                                                            Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter; termination sequence.
                                                                                                                                                                                                                                                       G59943;
                                                                                                                                                                                                                                                                       G59943 standard;
                                                                                                                                        EP1033405-A2
                                                                                                     25-FEB-2000;
                                                                                                                       06-SEP-2000
                                                                                                                                                           Arabidopsis thaliana.
                                                                                                                                                                                                                Arabidopsis thaliana protein fragment SEQ ID NO: 77591.
                                                                                                                                                                                                                                   18-OCT-2000
                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                                                                   7 YFFLFCL 13
|||||||
7 Yfflfcl 73
                                                                                                                                                                                                                                                                                                                                                        h 3.5%; So Similarity 100.0%; F 7; Conservative 0;
                                                                                                                                                                                                                                   (first
                                                                                                    2000EP-0301439
99US-0121825
99US-0123180
99US-0123548
99US-0125788
99US-0125787
99US-0126785
99US-0127462
99US-0127462
99US-0128714
99US-0128714
                                                                                                                                                                                                                                                                                                                                                                                           9905-0159293
9905-0159294
9905-0159295
9905-0159330
9905-0159331
9905-0159637
9905-0159637
9905-0159584
9905-0160741
9905-0160767
9905-0160770
9905-0160815
9905-0160815
9905-0160815
9905-0160815
9905-0160815
9905-0160815
9905-0160815
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
9905-0161406
                                                                                                                                                                                                                                                                        Protein; 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       s-0158029.
s-0158232.
s-0158369.
                                                                                                                                                                                                                                  entry)
                                                                                                                                                                                                                                                                                                                                                       b; Score 7; DB 2
b; Pred. No. 28;
0; Mismatches
                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                DB 21;
o. 28;
                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                          Length 209;
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                         0
 19-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
00-MAY-1999
00-MAY-1999
11-MAY-1999
11-JUN-1999
9908-013047

9908-013011

9908-0130891

9908-0132487

9908-0132486

9908-0132486

9908-0132486

9908-0132486

9908-0132486

9908-0132486

9908-0132486

9908-0132486

9908-013421

9908-013421

9908-013421

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-0134221

9908-013422

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0139452

9908-0140823

9908-0140823

9908-0140823

9908-014082

9908-014203

9908-014203

9908-014203

9908-014203

9908-014203

9908-014203

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144085

9908-0144331

9908-0144333
```

```
PR 20-JUL-1999 99US-014435.
PR 20-JUL-1999 99US-0144632.
PR 21-JUL-1999 99US-0144804.
PR 21-JUL-1999 99US-0145086.
PR 22-JUL-1999 99US-0145146.
PR 22-JUL-1999 99US-0145224.
PR 22-JUL-1999 99US-0145224.
PR 23-JUL-1999 99US-0145218.
PR 27-JUL-1999 99US-0146386.
PR 27-JUL-1999 99US-0146388.
PR 02-AUG-1999 99US-0146388.
PR 02-AUG-1999 99US-0147204.
PR 06-AUG-1999 99US-0147204.
PR 06-AUG-1999 99US-0147204.
PR 11-AUG-1999 99US-0147204.
PR 11-AUG-1999 99US-0147204.
PR 11-AUG-1999 99US-0147204.
PR 11-AUG-1999 99US-0147204.
PR 23-AUG-1999 99US-0147205.
PR 23-AUG-1999 99US-0147205.
PR 23-AUG-1999 99US-0147206.
PR 23-AUG-1999 99US-014720.
PR 23-AUG-1999 99U
```

```
밁
                                                     δÃ
                                                                                                                                                                                                                                  \(\tau \) \(\ta \) \(\tau \) \(\ta \) \(\tau \
                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                                                            14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
21-OCT-1999
21-OCT-1999
21-OCT-1999
21-OCT-1999
21-OCT-1999
22-OCT-1999
22-OCT-1999
22-OCT-1999
22-OCT-1999
25-OCT-1999
25-OCT-1999
26-OCT-1999
26-OCT-1999
26-OCT-1999
26-OCT-1999
27-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
28-OCT-1999
                                                                                                                                              y Match
Local S
     67
                                                  7
7 YFFLFCL
|||||||
7 Yfflfcl
                                                                                                              h 3.5%; S
Similarity 100.0%;
7; Conservative 0;
     13
73
                                                                                                                                                                                                                            990S-0159330.
990S-0159331.
990S-0159638.
990S-0159644.
990S-0160767.
990S-0160760.
990S-0160815.
990S-0160815.
990S-0160815.
990S-0160980.
990S-0161405.
990S-0161405.
990S-0161360.
                                                                                                                    Score 7; DB 2; Pred. No. 28; 0; Mismatches
                                                                                                                                   DB . . 28;
                                                                                                                                                                            21;
                                                                                                                    0;
                                                                                                                                                                         Length
                                                                                                                       Indels
                                                                                                                                                                            209;
                                                                                                                    0
                                                                                                                 Gaps
```

Search completed: May 30, 2001, 16:52:29 Job time: 25 sec

0;

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ched:
 10
11
                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein search, using sw model
                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                         PIR_67:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  May 30, 2001, 16:52:04 ; Search time 14.15 Seconds (without alignments) 961.635 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      198801 seqs, 68722935 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-509-283-2
198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                              50000
                                                                                                                                                                                                                                                                                                                                                                                                                         pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                                                                                            Length
1291
1361
1466
1766
4151
32
72
82
85
98
99
99
                                                                                                                                                              1047
                                                                                                                                                                                                                                                                                                                            DВ
                                                                                                                                                                                                                                                                      S78540
JC7397
JC7396
H69779
          F70240
G72399
S61816
S09674
S66164
T43600
B53116
D22848
I48098
                                                                                                         T30566
S03701
T13734
                                                                                                                                                             H71303
S54353
T41343
                                                                                                                                                                                             S77231
T37562
T18180
T43434
B81711
                                                                                                                                         T06692
T03415
                                                                                                                                                                                                                                                                                                                            Ħ
                                                                                                                                                                                                                                                   T08451
                                                                                                                                                                                                                                                              R3HS12
                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            198801
                                                                      ATP-binding casset
141K protein - pea
groovin gene protee
hypothetical prote
ribosomal protein
M-like protein enn
                                                                                                                                                  hypothetical prote inter-alpha-trypsi probable translati hypothetical prote
                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                            hypothetical prot
phosphoglycolate
probable n-acetyl
         serotonin recepto
                                                   hypothetical prot
single strand DNA
                                                                                                                                                                                          translation elong conserved hypothe
                                                                                                                                                                                                                                                                                activation-induc
                   hypothetical ORF-
                                        probable transpos
                                                                                                                                                                                                                   proline-rich prot
                                                                                                                                                                                                                                                                                            activation-induc:
                                                                                                                                        S-layer protein -
                                                                                                                                                                                                                                                            ribosomal protein
                                                                                                                                                                                                                                                                       antibiotic
                                                                                                                                                                                                                                                                                                      inducible T-cell
                               g epsilon chain
                                                                                                                                                                                                                                                                       resist
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
σ	σ	σ	σ	0	σ	0	0	σ	6	6	σ	σ	σ	σ	6
3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
153	150	138	135	135	135	135	135	135	130	129	126	121	115	113	113
Ν	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2
в69033	D46036	E81045	в70456	T06451	T06431	T06430	T06426	E71413	S67024	T50446	C53116	T24096	E53116	T25658	S49981
conserved hypothet	galactosyltransfer	hypothetical prote	thioredoxin - Aqui	ribosomal protein	probable membrane	conserved hypothet	Ig epsilon chain C	hypothetical prote	Ig epsilon chain C	hypothetical prote	Tcell receptor alp				

### ALIGNMENTS

inducible T-cell co-stimulator ICOS precursor - human (;Species: Homo sapiens (man) (;Cpecies: Homo sapiens (man) (;Date: 05-Mar-1999 #sequence_revision 05-Mar-1999 #text_change 07-May-1999 (;Accession: S78540; S78748; S78749 R;Kroczek, R.

submitted to the Protein Sequence Database, June 1998 A;Reference number: S78540 A;Accession: S78540

RESULT S78540

All Db	Qy		A; M A; R A; E B; H B; H B; H B; H B; H B; H B; H B; H
61 ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120	Query Match 76.8%; Score 152; DB 2; Length 199; Best Local Similarity 100.0%; Pred. No. 2.1e-155; Best Local Similarity 100.0%; Pred. No. 2.1e-155; Matches 152; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  1 MKSGLWYFFLFCLRIKVLTGEINGSANYEMFIFHNGGVQILCKYPDIVQQFKMQLLKGGQ 60	C;Complex: homodimer C;Superfamily: immunoglobulin homology C;Superfamily: immunoglobulin homology C;Superfamily: immunoglobulin homology C;Keywords: dimer; glycoprotein; T-cell; transmembrane protein E;1-19/Domain: (or 1-20) signal sequence #status predicted <sig> E;1-19/Domain: (or 1-21) pladucible costimulator ICOS #status predicted <mat> E;20-199/Product: (or 21-199) inducible costimulator ICOS #status predicted <ext> E;21-138/Domain: extracellular #status predicted <ext> E;26-132/Domain: immunoglobulin homology <imm> E;139-164/Domain: intracellular #status predicted <imm> E;139-164/Domain: intracellular #status predicted <imm> E;139-164/Domain: intracellular #status predicted <imm> E;139-164/Domain: sintracellular #status predicted <imm> E;139-164/Domain: sintracellular #status predicted <imt> E;23,89,110/Binding site: carbohydrate (Asn) (covalent) #status predicted</imt></imm></imm></imm></imm></imm></ext></ext></mat></sig>	A; Molecule type: mRNA A; Residues: 1-199 < KRO> A; Residues: 1-199 < KRO> A; Experimental source: cell line MOLT-4V R; Hutloff, A.; Dittrich, A.M.; Beler, K.C.; Eljaschewitsch, B.; Kraft, R.; Anagnostop Nature 397, 263-266, 1999 Nature 397, 263-266, 1999 A; Title: TCOS is an inducible T-cell co-stimulator structurally and functionally rela A; Reference number: S78748; MUID:99127892 A; Recession: S78748 A; Molecule type: mRNA A; Residues: 1-199 < HUT1> A; Experimental source: cell line MOLT-4V A; Accession: S78749 A; Molecule type: protein A; Residues: 'X', 193-198 < HUT2> A; Experimental source: cell line MOLT-4V A; Residues: 'X', 193-198 < HUT2> A; Experimental source: cell line MOLT-4V A; Experimental source: cell line MOLT-4V

```
RESULT
H69779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: mRNA
A;Residues: 1-216 <TESZ>
A;Residues: nestion: PC7099
ession: PC7099
ession: PC7099
A;Residues: 21-40 <TESZ>
C:Comment: This protein is an inducible cell surface glycoprotein, and a type I transmem on, and plays an important role for the maturation or selection of T cells in thymus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                activation-inducible lymphocyte immuno-mediatory molecule-2 - rat c;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000
C;Accession: JC7397; PC7100
C;Accession: J
    antibiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         activation-inducible lymphocyte immuno-mediatory molecule-1 - rat C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Nov-2000 #sequence_revision 17-Nov-2000 #text_change 17-Nov-2000
C;Accession: JC7396; PC7099
R;Tezuka, K.; Tsuji, T.; Hirano, D.; Tamatani, T.; Sakamaki, K.; Kobayashi, Y.; Kamada, Biochem. Biophys. Res. Commun. 276, 335-345, 2000
A;Title: Identification and characterization of rat AILIM/ICOS, a novel T-cell costimul.
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: JC7396
A; Contents: Spleen
A; Accession: JC7396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: protein
A;Residues: 21-40 <TEZ>
C:Comment: This protein is an inducible cell surface g
on, and plays an important role for the maturation or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-200 <TEZ>
A; Cross-references: DDBJ: AB023134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Contents: Spleen
A; Accession: JC7397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: PC7100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: JC7396
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ywords: glycoprotein; T-cell; transmembrane protein
                                                                                                                                                                                                                                          62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ailim-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ailim-2
resistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glycoprotein; T-cell; transmembrane proteir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
    protein homolog ydfB
                                                                                                                                                                                                                                                                                                                                                                                           8.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.6%;
                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                           Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                       DB 2; L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; L; 2.2e-10;
    Bacillus subtilis
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            glycoprotein, and a type r selection of T cells in
                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            I transmen
                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
```

```
C:Accession: H69779

R:Kunst, F; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Ber C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; A.; Brilch, S.D.; Emmerson, P.T.; Entlan, K.D.; Errington, J.; Fabret, C.; Ferrari, A.; Ehrlington, J.; Farrwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.; Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardino A; Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Mau y, M.; Ogawa, K.; Ogawara, A.; Oudega, B.; Parrk, S.H.; Parro, V.; Pohl, T.M.; Portete Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanl A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Se akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiya a; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida A; Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A. A; Accession: H69779

A:Status norder: A69580; MUID:98044033

A:Status norder: A69580; MUID:98044033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Date: 31-mar 257, C24304
C;Accession: S00183; C24304
R;Kimura, J; Arndt, E; Kimura, M.
R;Kimura, J; Arndt, E, Kimura, M.
FEBS Lett. 224, 65-70, 1987
A;Title: Primary structures of three highly acidic ribosomal proteins S6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Note: the source is designated as Halobacterium marismortui A;Note: the protein is designated as ribosomal protein S12 R;Shoham, M.; Dijk, J.; Reinhardt, R.; Wittmann-Liebold, B. FEBS Lett. 204, 323-330, 1986
A;Title: Purification and characterization of ribosomal proteins
Query Match
Best Local Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
""" 8; Conserv
                                                                                                                                                                                                                                                                C; Superfamily: rat ribosomar process of control of the control of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A24304
A; Accession: C24304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ribosomal protein S19.eR [validated] - Haloarcula marismortui N;Alternate names: ribosomal protein E1.3; ribosomal protein HS12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: ydfB
C;Superfamily: probable antibiotic resistance protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Bacillus subtilis
C;Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 20-Jun-2000
                                                                                                                                                                                                                                                                                                                                  A; Note: the source is designated as Halobacterium C; Superfamily: rat ribosomal protein S19
                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Residues: 1-11,'E',13-14,'I',16-18,'I',20-21 <SHO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein A; Residues: 1-147 < KIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Species: Haloarcula marismortui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:Z99106; GB:AL009126; NID:g2632653; PIDN:CAB12342.1; PID:g26328
A;Experimental source: strain 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-261 < KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary; nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163 LTKKKYSS 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 LTKKKYSS 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ydfB
                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.0%;
                                                                                               100.0%;
                                                                                          3.5%; Score 7; I
L00.0%; Pred. No.
                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 8; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
o. 1.3;
                                                                                               . 98
                                                                                                                                                                                                                                                                                                                                                                                         marismortui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #text_change 04-Feb-2000
                                             0,:
                                                                                                                                        Length 147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ydfB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                             Indels
                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           not shown
                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S12 and
                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      subuni
```

67 KTKGSGN

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                            Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                                                                                            Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                 Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09:
                                                                                                                                                                                                                                                                                                                                                                                                                ched:
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                            seq length: 0
seq length: 2000000000
   あのあめのめのあめののののののののののののののののの
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein search, using sw model
                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                              OLIGO
Gapop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               May 30, 2001, 16:52:49; Search time 9.63 Seconds (without alignments) 704.318 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-509-283-2
198
                                                                                                                                                                                                                                                                                                                              SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                               93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL 198
                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                              60.0 , Gapext 60.0
  В
YM08_PARTE
TRY4_RAT
VMT1_INBAC
FHUF_ECOLI
YBLC_SCHPO
ISPE_BUCAI
RM07_SCHPO
SFAH_ECOLI
CAHH_VACCC
CAHH_VACCC
                                                                          RPB6_ASFW2
RPB6_ASFW3
FMA3_ECOLI
YALL_ECOLI
YALL_ECOLI
YECP_ECOLI
YECP_ECOLI
YECP_ECOLI
BEP_PIEBR
RPDE_HAEIN
RL9A_YEAST
RPDE_ECOLI
RPDE_ECOLI
RPDE_ECOLI
RPDE_ECOLI
RPDE_ECOLI
YESA_TYBA
YESA_ECOLI
Y450_MYEGA
                                                                                                                                                                                                        R19E_HALMA
ITH1_MOUSE
RL28_THEMA
NULM_PHYIN
TTH1_CAEEL
RL27_ARATH
                                                                                                                                                                                               RL27_PEA
                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                   93435
                                                                                                                                                                                                              P19952 haloarcula
Q61702 mus musculu
Q9wy96 thermotoga
Q37598 phytophthor
Q21882 caenorhabdi
 P04007
P171127
P175609
P15609
P12788
P13879
P39405
Q9urv0
P5907267
O14337
P13431
P20508
                                                                                                               P09464
P44790
P05738
P51401
                                                                                                                                                                                                                                                            Description
4 pieris bras
6 haemophilus
8 saccharomyc
1 saccharomyc
6 escherichia
1 salmonella
7 nicotiana a
7 mycoplasma
7 escherichia
9 paramecium
8 rattus norv
9 influenza b
5 escherichia
0 schizosacch
7 buchnera ap
7 schizosacch
8 vaccinia vi
5 vaccinia vi
                                                                                                                                     9 african swi
4 african swi
4 escherichia
3 escherichia
4 escherichia
9 escherichia
5 escherichia
5 pieris bras
                                                                                                                                                                                 9 arabidopsis
2 pisum sativ
9 african swi
4 african swi
```

				•		
RESULT ITH1_M ID IQ AC Q DT 1 DT 1 DT 0 DT 0 DT 0 GN I	Qu Be Ma Qy	RT CC CC CC DR DR DR CW SQ TTTT	R R R R R R R R R R R R R R R R R R R	R O O O O O O O O O O O O O O O O O O O	RESULT R19E_H ID R	
LT 2 _MOUSE ITH1_N 061701 15-JUI 15-JUI 01-OC1 INTER: CHAIN	Query Matc Best Local Matches / 67 KT   11 5 87 KT	subunit o: FEBS Lett -!- SIMILL PIR; S0011 InterPro; pfam; PFO: PROSITE; I Ribosomal; Ribosomal; CONFLICT CONFLICT CONFLICT SEQUENCE		01-FEB-1991 01-FEB 1991 30-MAY-2000 30S RIBOSOMA RPS19E Haloarcula m Archaea; Eur NCBL_TaxID=2	LT 1 _HALMA R19E_HA P19952;	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
AOUSE 2-1998 1-1998 1-2000 -ALPHA- H1).	Simi Simi 7; KGSGP	mit of the state o		1991 1991 2000 OSOMA ula m ; Eur xID=2	LMA	, , ,
STAND (Rel. 36 (Rel. 36 (Rel. 40	Conserva 73	BE SET SET SET SET SET SET SET SET SET SE	38055606; Pu Arndt E., Arndt E., Arndt E., Arndt E., Putter of Putter of Putte	FEB-1991 (Rel. 17, FEB-1991 (Rel. 17, MAY-2000 (Rel. 39, RIBOSOMAL PROTEIN OATCULA MATISMOTTU MATERIAL EUTYATCHAEOT (LTAXID=2238;	STANI	
STANDARD; 1. 36, Created) 1. 36, Last seg 1. 40, Last and PSIN INHIBITOR	3.5 100. tive	eme ha 330(19 330(19 DNGS T. ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	of Dan	v r v s ta;	TANDARD;	304 306 307 313 324 324 324 346 358
irt atte	0 %	Loph 86). O TH S19e AL_S	mura   mura   three bacte 87).	ete et sit sit a lit a l		
PRT; ed) sequence annotati OR HEAVY	Score Pred 0; Mi	EEH E. B E.	ed=3315748; imura M.; three high ebacterium 987).	reated) ast squence up ast annotation 19E (HS12) (E1. (Halobacterium Halobacteriale	AL PRT	CAHH_VARV RCEM_RHOCA RCEM_RHOSH NUZM_RHISA YB9K_YEAST MAS_MOUSE MAS_RAT FPPS_ARTAN YC54_SYNY3 GLPO_ECOLI ODPH_PEA
T; nce atio AVY	core 7 Pred. Mism	-3 • • •		nce up ation ) (E1. erium eriale	LIGN	LVAR LRHO LRHO LYEA MOUS RAT LSYN LSCH LECO
907 A update on upda CHAIN 1	re 7; DB ed. No. 4; Mismatches	9E FAMILY  1. 1. 1 (IN REFICIAN REFICIA	748; highly acidic I highly acidic I ium Halobacteri R., Wittmann-1	update in upda 11.3). Im mari	ALIGNMENTS	CA CA SA SA SA SA SA SA SA SA
PRT; 907 AA. ted) sequence update) annotation update) TOR HEAVY CHAIN HI	)B 1; 4; les	ICTETIUM OF A REF. A REF. A REF. D145230	dic ribo cterium ann-Lieb	te) date) rismc Halc	AA.	
) PREC	Ler 0;	OF RII	ribosomal rium marism -Liebold B.	) ortui		
PRECURSOR	Length 14 0; Indel	marismort RIBOSOMAL ). ). ). E CRC64;	somal narism	l).		
	th 147; Indels	# tt	prot	late) 'ismortui). Halobacteriaceae;		P333 P112 P38 P38 P122 P912 P913
(ITI HEAVY	0,	ui.";	from			P33065 P11847 P02953 O99817 P38342 P30554 P125256 P49350 P74078 P74078 P91798 P91798
EAV			5 8 8	loa		variol rhodob rhodob rhipic saccha mus mu rattus artemi synechist schist eschist pisum
к	Gaps		30	Haloarcula		variola rhodobac rhodobac rhipicep saccharo mus musc rattus n artemisi synechoc schistoc escheric pisum sa
		,	. Ν			variola vir rhodobacter rhodobacter rhigicephal saccharomyc mus musculu rattus norv artemisia a synechocyst schistocerc escherichia pisum sativ
	0;					

```
ដូនដូ
                                       RESULT 3
RL28_THEMA
                                                                                                                                                                                                                                                                                      В
                                                                                                                      Š
                                                                                                                                                   Matches
                                                                                                                                                              Query Match
Best Local
RL28_THEMA
Q9WY96;
30-MAY-2000
                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
CARBOHYD
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chan P., Risler J.-L., Raguenez G., Salier J.-P., "The three heavy-chain precursors for the inter-alpha-inhibitor family in mouse: new members of the multicopper oxidase protein group with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; C
Mammalia; Eutheria; F
                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                         Glycoprotein.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     differential transcription in liver and brain."; Biochem. J. 306:505-512(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-C57BL/6N; TISSUE-Liver; MEDLINE-95194326; PubMed-7534067;
                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                 PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-10090
                                                                                                48
                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY).

SUBUNIT: I-ALDHA-I PLASMA PROTEASE INHIBITORS ARE ASSEMBLED FROM ONE OR TWO HEAVY CHAINS (H1, H2 OR H3) AND ONE LIGHT CHAIN, BIGUNIN. INTER-ALPHA-INHIBITOR (I-ALPHA-I) IS COMPOSED OF H1, H2 AND BIKUNIN, INTER-ALPHA-LIKE INHIBITOR (I-ALPHA-LI) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-I) OF H3 AND BIKUNIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO SIMILARITY: CONTAINS 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: LIVER-SPECIFIC.

PTM: HEAVY CHAINS ARE INTERLINKED WITH BIKUNIN VIA A CHONDROITIN
4-SULFATE BRIDGE TO THE THEIR C-TERMINAL ASPARTATE (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: MAY ACT AS A CARRIER OF HYALURONAN IN SERUM OR AS BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH
                                                                                                            VSIKSLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESSENTIAL TO CELLS UNDERGOING BIOLOGICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                       MGI:96618; It1h1.
                                                                                              VSIKSLK
                                                                                                                                                                                                                                                                                                                                                                                             PF00092; vwa; 1.
E; PS50234; VWFA_DOMAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   X70391; CAA49841.1;
                                                                                                                                                 . Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                 protease inhibitor;
                                                                                                                                                                                                                     907
                                                                                                                                                                                                                                               585
585
585
 (Rel.
                                                                                                                                                   Conservative
                                                                                              54
                                                                                                                        81
                                                                                                                                                                                                                                                                                                                                         1
27
                                                                                                                                                                                                                     AA;
                          STANDARD;
39, Created)
                                                                                                                                                                                                                                               907
447
282
285
585
                                                                                                                                                                                                                                                                                                                                         26
668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                     101082
                                                                                                                                                             3.5%;
100.0%
                                                                                                                                                               .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THE ITIH FAM VWFA DOMAIN.
                                                                                                                                                                                                                     WW.
                                                                                                                                                                                                                                                                                                                                                                                 Repeat; Signal; Multigene family;
                                                                                                                                                   0;
                                                                                                                                                 Score 7; DB 1
Pred. No. 20;
0; Mismatches
                                                                                                                                                                                                                                                                                                  POTENTIAL.
VWFA.
                                                                                                                                                                                                                                            N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
CHONDROITIN 4-SULFATE,
                                                                                                                                                                                                                                (Вү
                                                                                                                                                                                                                                                                                                                                         INTER-ALPHA-TRYPSIN INHIBITOR HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                    FE7FD76500CAF3BC
                                                                                                                                                                                                                                SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FAMILY.
                                                                                                                                                        DB ,
                          72
                          A
                                                                                                                                                                            1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROCESSES
                                                                                                                                                 0,
                                                                                                                                                                           Length 907
                                                                                                                                                                                                                    CRC64;
                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                       (POTENTIAL).
                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a collaboration
                                                                                                                                                 0
                                                                                                                                                                                                                                               SITE
                                                                                                                                                 0;
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                          NULM_PHYIN
Q37598;
15-JUL-1998
15-JUL-1998
15-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-MSB8 / DSM 3109;
MEDLINE-99287316; pubmed-10360571;
Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,
Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,
McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,
Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,
Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,
Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;
"Fyidence for lateral gene transfer between Archaea and Bacteria fro
genome sequence of Thermotoga maritima.";
Nature 399:323-329(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2000 (R
30-MAY-2000 (R
50S RIBOSOMAL
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                    STRAIN ATCC 16981;
Chesnick J.M., Tuxbury K.,
Submitted (APR-1996) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El the European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                                 NADH-UBIQUINONE
ND4L OR NAD4L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AE001708; AAD35344.1; -. TIGR; TM0255; -.
                                                                                     Chesnick J.M., Tuxbury K., Coleman A., Burger G., Lang B.F.; Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
-1- CATALYTIC ACTIVITY: NADH + UBIQUINONE - NAD(+) + UBIQUINOL.
                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                         Phytophthora
                                                                                                                                                                                                                    Mitochondrion.
                                                                                                                                                                                                                                Phytophthora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00830; Ribosomal_L28; Ribosomal protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-MSB8 / DSM 3109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Thermotogales; NCBI_TaxID=2336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thermotoga maritima
                                                                                                                                                                         NCBI_TaxID:4787;
                                                                                                                                                                                                     Eukaryota; stramenopiles;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001383; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RPMB OR TM0255
                                                                                                                                                                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                                                                                                                                                                                                                                   71 SGNTVS 76
                                                                                                                                                                                                                                                                                                                                                                                                          SGNTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein.
72 AA;
                                                                                                                                                                                                                                                           (Rel. 36, Created)
(Rel. 36, Last sequence update)
(Rel. 36, Last annotation updat
NONE OXIDOREDUCTASE CHAIN 4L (EC
                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 39, Last sequence update) (Rel. 39, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                  infestans
                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8052 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.0%; 5cc
100.0%; Pr
                                                                                                                                                                                                                                  (Potato late
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thermotoga
                                                                                                                                                                                                     Oomycetes; Pythiales; Pythiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A18B09B0F9F76B49 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 6;
Pred No
                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                          on update)
                                                                                                                                                                                                                                blight fungus).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB .
                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Usage
                                                                                                                                                                                                                                                              .6.5.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum
Maximum
                                                                                                                                                                                                                                Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Word size :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                      No.
     10
11
12
13
14
15
16
17
18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ched:
                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB DB
                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq length:
seq length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein search, using sw model
                                                                                                                                                                                                                                                                                                                    7:
8:
9:
10:
11:
12:
13:
                                                                                                                                                                                                                     Match
                                                                                                                                                                                                                               Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     May 30, 2001, 16:52:34 ; Search time 22.71 Seconds (without alignments) 1021.892 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-509-283-2
198
                                                                                                                                                      76
88
88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPTREMBL_15:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374700 seqs, 117207915 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 60.0 , Gapext 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OLIGO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MKSGLWYFFLFCLRIKVLTG.....YMFMRAVNTAKKSRLTDVTL
                                                         sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                           sp_mhc: *
                                                                                                                                                                                                                                                                                                                                                                                   sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                        sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                   sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                            sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_archea:*
                                                                                                                                                                                                                                                                                                                    sp_virus:*
                                                                                                                                                                                                                                                                                                                              sp_unclassified:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                   sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                           sp_plant:*
                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000000000
                                                                                                                                 261
1243
    209
221
221
309
309
359
385
387
471
513
                                                                                                             108
173
                                                                                                                                                                                                                      B
                                                                                                                                                                          Q9Y6W8
1 Q9R1T7
1 Q9WVR9
                                             P73525
P73525
Q72512
Q71309
Q91BF8
Q911160
                                                                                                                     Q9WVS0
Q9JL17
P96679
Q9RDG5
Q9V7Z6
   Q9UUL5
Q24204
                                                                                                            038610
                                                                                                                                                                                                                     IJ
                        Q9IBG0
Q84697
                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                374700
P73525 synechocyst
Q72512 human immun
Q71309 human immun
Q91bf8 oryzias lat
Q41160 paramecium
Q91090 oryzias lat
Q84697 pea early b
Q9uul5 schizosacch
Q24204 drosophila
                                                                                                                                                     Q9r1t7 rattus norv
Q9wvr9 rattus norv
Q9wvs0 mus musculu
Q9y1117 mus musculu
                                                                                                                     P96679 bacillus su
Q9rdg5 streptomyce
Q9v7z6 drosophila
                                                                                                 Q38610 bacteriopha
Q9svc9 arabidopsis
                                                                                                                                                                                             Q9y6w8 homo sapien
                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
```

45	44	43	42	41	40	39	3 8	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20
6	6	6	σ	6	6 .	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
3.0	3.0	3.0	3.0	3.0	3.0	3.0	ω .5	ა . 5	3 .5	3.5	3.5	3.5	3.5	ω .5	ω .5	3.5	ω . 5	ω .5	ω .5	ω .5	ა . 5	ω .5	ω .5	3.5	3.5
93	92	87	82	79	79	32	5385	5293	5201	4625	4151	1766	1466	1361	1361	1319	1291	1152	1047	998	997	962	817	605	558
10	14	2	N	14	N	Ν	σı	ű	υ	10	J.	14	w	N	N	4	10	4	ω	ω	w	w	ъ	N	2
Q9SQM7	Q9JEN0	Q55319	Q54656	Q04252	Q9X9G0	050861	Q9V6V3	Q9V6V2	Q9U479	Q9SMH3	096936	Q9WJD8	P78576	087083	030524	094885	Q9SU54	Q9NUF2	094489	Q9UR20	074242	014437	Q9VZJ5	083607	Q9PKV6
Q9sqm7 arabidopsis	Q9jen0 human immun	Q55319 synechococc	Q54656 streptococc	Q04252 human papil	Q9x9g0 yersinia ps	050861 borrelia bu		Q9v6v2 drosophila	Q9u479 drosophila	Q9smh3 chlamydomon	096936 drosophila	Q9wjd8 pea early b	P78576 emericella	087083 wolinella r	030524 wolinella r	094885 homo sapien	Q9su54 arabidopsis	Q9nuf2 homo sapien	094489 schizosacch	Q9ur20 cryptococcu	074242 cryptococcu	-	Q9vzj5 drosophila	083607 treponema p	Q9pkv6 chlamydia m

## ALIGNMENTS

```
Qy
                                              В
                                                                 Qy
                                                                                            В
                                                                                                                 Qy
                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8M9A6D
                                                                                                                                           Matches
                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                     Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                        Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases EMBL, AB023135; BAA82129.1; -.
                                                                                                                                                                                                                                                              Tezuka K., Tamatani T.;

"Cell surface molecule mediating cell adhesion and signal transmission.";
                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1999 (TremBLrel. 12, Created)
01-NOV-1999 (TremBLrel. 12, Last sequence update)
01-NOV-1999 (TremBLrel. 12, Last annotation update)
ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE AILIM
                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                        PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              8M9 X 6 D
                                                                                                                                                                                                                                                                                                     TISSUE=BLOOD;
                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
           121 VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV 152
121
                                              61
                                                                      61
                                                                                           ILCDLTKTKGSGNTVSIKSLKFCHSQLSNNSVSFFLYNLDHSHANYYFCNLSIFDPPPFK 120
VTLTGGYLHIYESQLCCQLKFWLPIGCAAFVV
                                                                                                                                            152;
                                                                                                                                                                                                      199 AA;
                                                                                                                                         76.8%; Score 152; DB 4; Liarity 100.0%; Pred. No. 1.4e-156; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                     20 P
22624 MW;
                                                                                                                                                                                                     POTENTIAL.
214EC741C9BDC9FC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
152
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                 Length 199;
                                                                                                                                            Indels
                                                                                                                                            0
                                                                                                                                           Gaps
                                                                                                                                            0,
```

```
RESULT OPRLYT OF DEED DEED OF THE OPPLY OF THE OPPLY O
RESULT 4
D9WVSO
D 29FVSO
                                                                                                                                                                                                                                                                               PART OF THE RESULT OF THE RESU
                                                                                                   밁
                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Ma
Best Loc
Matches
                                                                                                                                                                                                  Query
Best I
                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9R1T7;
01-MAY-2000
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                 Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; ABO
Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID:10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-NOV-1999 (TrEMBLrel. 12, Last annotation update)
01-NOV-1999 (TrEMBLrel. 12, Last annotation update)
ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tezuka K., Tamatani T., "Cell surface molecule transmission.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. TISSUE-SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Tezuka K., Tamatani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9R1T7
                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                transmission
                                                                                                                                                                                                                                                                                                                                                                                                       Tezuka K.,
"Cell surfa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9WVR9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9WVR9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIVATION-INDUCIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   y Match
Local
                                                                                                   62
                                                                                                                     62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 LCDLTKTKGSGNTVSIK 78
                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LCDLTKTKGSGNTVSIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tted (FEB-1999) to the AB023134; BAA82128.1;
                                                                                                                                                                                                                                                                                                                                             tted (FEB-1999) to the AB023133; BAA82127.1;
                                                                                                                                                                                                                                                                                                                                                                                                  surface molecule
                                                                                                                                                                                 . Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . Similarity
17; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                           Tamatani
                                                                                                                                                                             8.6
ilarity 100.
Conservative
                                                                                                                                                                                                                                                                                   216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel.
    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                     Τ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        т.;
                                                                                                                                                                                                                                                                                 20
24260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
22529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   el. 13, Last sequence update)
el. 13, Last annotation update)
LYMPHOCYTE IMMUNOMEDIATORY MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                     mediating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mediating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13,13
                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                    .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .0%;
                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΜW,
                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                    Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 17;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                 POTENTIAL.
772E01320982B15A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
0A74C35581F129D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata;
Sciurognathi; Muridae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; | Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
    PRT;
                                                                                                                                          , DB 11;
Lu. No. 3e-10;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cell
                                                                                                                                                                                                                                                                                                                                                                                                       cell adhesion
    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.
2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .8e-10;
s 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Muridae;
                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                  and signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 200
                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Murinae;
                                                                                                                                                                                                                         216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AILIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AILIM
                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                 0
    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                    Q9JL17
Q9JL17;
Q1-OCT-2000
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                                                        01-OCT-2000 (TrEMBLrel. 15, Create 01-OCT-2000 (TrEMBLrel. 15, Last se 01-OCT-2000 (TrEMBLrel. 15, Last are 01-OCT-2000 (TrEMBLrel. 15, Last are CD28-RELATED PROTEIN I (FRAGMENT). Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Cell surface molecule transmission.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mages H.W., Hutloff A., H
Oliveri F., Kroczek R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRECURSOR (CCLP CCLP OR ICOS.
                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. STRAIN-BALB/C; TIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wu D., Giannoni M.A., Ki
Matis L.A., Rother R.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. STRAIN-BALB/C; TIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tezuka K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                       NCBI_TaxID-10090
                                                                                                                                                                                                                                       Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "CCLP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 GGYLHIYESQLCCQLK 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGYLHIYESQLCCQLK 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (FEB-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tamatani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200 AA;
                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-SPLEEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Τ.,
                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20 F
22690 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     င်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kiesecker C.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mediating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Heuck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ი,
                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            celi
```

```
SEQUENCE FROM N.A.

TISSUB-INTESTINAL INTRA-EPITHBLIUM;
YOShinaga S.K., Whoriskey J.S., Khare S.D., Sa
YOShinaga S.K., Whoriskey J.S., Khare S.D., Sa
Horan T., Shih G., Zhang M., Coccia M.A., Kohr
Campbell P., Chang D., Chiu L., Dai T., Duncar
Hui A., McCabe S.M., Scully S., Shaklee C.L.,
Senaldi G.;
"T-cell co-stimulation through B7RP-1 and ICO:
Nature 0:0-0(2000).
EMBL; AF216748; AAF45150.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9WVS0;
01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
ACTIVATION-INDUCIBLE LYMPHOCYTE IMMUNOMEDIATORY MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Molecular cloning and characterization identification of B7h as ICOS ligand."; Eur. J. Immunol. 30:1040-1047(2000). EMBL; AB023132; BAA82126.1; -. EMBL; AF257230; AAF70099.1; -. EMBL; AJ250559; CAB71153.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            novel molecule that regulates T cell (APR-2000) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
9B2278E4CAB1DB47
                                                                                                                                                                                                          Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                 sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Buchner
                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    adhesion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Faas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              н
                                                                      Duncan
C.L., V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11;
3.4e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ō,
                                                                                      Kohno T.,
Juncan G., E
                                                                                                                                                                                                                                                                                 on update)
                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                  · L . ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ×.
                                    ICOS.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        murine
                                                                                     Sarmiento U., Guo J.,
bhno T., Tafuri-Bladt
can G., Elliott G.S.,
                                                                                                                                                                                                                Muridae;
                                                                      Van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          activation.";
databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Himmelbauer H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mickle A.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  signal
                                                                                                                                                                                                                                Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AILIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                        Α.
```

Sequence 13, Appl Patent No. 5242798

Sequence

Sequence Sequence Sequence Sequence Appli Appli Appli Appli Appli

sednence sed

Sequence Sequence Sequence Sequence

Word size :

Searched:

Sequence:

Database:

Result g Appli Appli Appli

OM protein

Run on:

```
Sequence 4, Application US/08480505

Sequence 4, Application US/08480505

Patent No. 5601821

GENERAL INFORMATION:
APPLICANT: STANMORTH, DENIS R
APPLICANT: EMIN, IAN UNDOCATIVE PEPTIDES AND ANTIBODIES AND TITLE OF INVENTION: IMMUNOACTIVE PROFILES IN ORRESPONDENCE ADDRESS:
ADDRESSEE: 14TH FLOOR, 2200 CLARENDON BOULEVARD
COURTY: USA
COUNTRY: USA
COUNTRY: USA
COUNTRY: ESANDARIES ENDARIES ESANDARIES ESANDARIES ENDARIES ENDARIES ESANDARIES ESANDARIES ENDARIES ENDARIES ENDARIES ENDARIES ENDARIES ENDARIES ESANDARIES ENDARIES ENDARI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATIOG SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/480,505
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/102,692
                                                                                                      US-08-118-270-29
PCT-US93-08528-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
APPLICATION NUMBER: US 07/776,380
FILING DATE: 26-NOV-1991
APPLICATION NUMBER: US 08 913737.6
FILING DATE: 15-JUN-1989
FILING APPLICATION DATA:
APPLICATION DATA:
FILING APPLICATION DATA:
APPLICATION NUMBER: WO PCT/GB90/00926
FILING DATE: 15-JUN-1990
ATTORNEY/AGENT INFORMATION:
NAME: MITCHARD, LEDNARD C
REGISTRATION NUMBER: 29,009
REFERENCE/DOCKET NUMBER: 9,009
REFERENCE/DOCKET NUMBER: 604-176
TELECOMMUNICATION INFORMATION:
TELEFAX: (703) 525-3468
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 8 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
  0000000000000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-480-505-4
  Sequence 4, Appli
Sequence 5, Appli
Sequence 6, Appli
Sequence 79, Appl
Sequence 79, Appl
Sequence 79, Appli
Sequence 79, Appli
Sequence 10, Appli
Sequence 103, Appli
Sequence 103, Appli
Sequence 104, Appli
Sequence 106, Appli
Sequence 107, Appli
Sequence 107, Appli
Sequence 108, Appli
Sequence 108, Appli
Sequence 20, Appli
                                                                                                                                                                                        May 30, 2001, 16:52:04; Search time 12:96 Seconds (without alignments) 293.499 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                ......YMFMRAVNTAKKSRLTDVTL 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                             4.5
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-480-505-4
US-08-480-505-5
US-08-480-505-6
US-08-480-505-6
US-08-446-692-79
US-08-244-496-79
US-08-244-496-79
US-08-248-351A-79
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-480-505-1
US-08-481-351A-103
US-08-488-351A-104
US-08-399-106A-6
US-08-399-106A-6
US-08-399-106A-6
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
US-08-331-625-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185757 segs, 19210857 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                             GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Listing first 45 summaries

    protein search, using sw model

                                                                                                                                                                                                                                                                                                                                                                                                                          OLIGO
Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                                                                                     1 MKSGLWYFFLFCLRIKVLTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                           US-09-509-283-2
198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
```

ö

```
Gaps
          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
          ö
                                                                                                                                                                                                                                  GENERAL INFORMATION:

APPLICANT: STANWORTH, DENIS R

APPLICANT: LEWIN, IAN V

APPLICANT: NAYYAR, SARITA

APPLICANT: JONES, VALERIE

TITLE OF INVENTION: IMMUNOACTIVE PEPTIDES AND ANTIBODIES AND

TITLE OF INVENTION: THEIR USE IN ANTI-ALLERGY TREATMENT

NUMBER OF SEQUENCES: 10

CORRESPONDENCE ADDRESS:
          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA

ZIP: 22201-3360

COMPUTER READABLE FORM:
MEDIUM TYPE: FLORPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/480,505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 3.0%; Score 6; DB 1; Len
Best Local Similarity 100.0%; Pred. No. 1.4e+05;
Matches 6; Conservative 0; Mismatches 0;
          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: NIXON & VANDERHYE P.C. STREET: 14TH FLOOR, 2200 CLARENDON BOULEVARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION NUBBER: US/08/102,692
FILING DATE:
APPLICATION NUBBER: US 07/776,380
FILING DATE: 26-NOV-1991
APPLICATION NUBBER: US 07/776,380
FILING DATE: 15-JUN-1989
PRIOR APPLICATION DATA:
APPLICATION NUBBER: WO PCT/GB90/00926
FILING DATE: 15-JUN-1980
APPLICATION NUBBER: WO PCT/GB90/00926
FILING DATE: 15-JUN-1980
APPLICATION NUBBER: WO PCT/GB90/00926
FILING DATE: 15-JUN-1980
ATTORNEY AGENT INFORMATION:
NAME: WITCHARD. LEDNARD C
REGISTRATION NUMBER: 604-176
FERECOMMUNICATION INFORMATION:
TOTAL COMMUNICATION INFORMATION:
          Mismatches
                                                                                                                                                                                             ; Sequence 8, Application US/08480505 ; Patent No. 5601821
        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (703) 875-0400
TELEFAX: (703) 525-3468
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-terminal
        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : peptide
NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VIRGINIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARLINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HYPOTHETICAL:
FRAGMENT TYPE:
US-08-480-505-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                             67 KTKGSG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67 KTKGSG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KTKGSG 6
                                                                                    2 KTKGSG 7
        ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: STATE:
        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                 ò
                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                        ö
                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: STANWORTH, DENIS R
APPLICANT: LEWIN, IAN V
APPLICANT: ANYYAR, SARIAR
APPLICANT: JONES, VALERIE
TITLE OF INVENTION: IMMUNOACTIVE PEPTIDES AND ANTIBODIES AND
TITLE OF INVENTION: THEIR USE IN ANTI-ALLERGY TREATMENT
                                                                                                                                                                        Indels
                                                                                                                          3.0%; Score 6; DB 1; Length 8; 100.0%; Pred. No. 1.4e+05; tive 0; Mismatches 0; Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 3.0%; Score 6; DB 1; Length 9; Best Local Similarity 100.0%; Pred. No. 1.4e+05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONTRY: USA
ZIP: 22201-3360
ZIP: 22201-3360
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/480,505
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUDRESSEE: NIXON & VANDERHYE P.C.
STREET: 14TH FLOOR, 2200 CLARENDON BOULEVARD
CITY: ARLINGTON
STATE: VIRGINIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
APPLICATION NUMBER: US 07/776,380
FILING DATE: 26-NOV-1991
APPLICATION NUMBER: GB 8913737.6
FILING DATE: 15-JUN-1989
PRIOR APPLICATION NUMBER: WO PCT/GB90/00926
FILING DATE: 15-JUN-1990
ATTORNEY AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: MITCHARD, LEONARD C
REGISTRATION NUMBER: 29,009
REFERENCE/DOCKET NUMBER: 604-176
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 875-0400
TELEFAX: (703) 875-3468
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 9 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/102,692
                                                                                                                                                                                                                                                                                                                                                      Sequence 5, Application US/08480505
Patent No. 5601821
GENBEL INFORMATION:
APPLICANT: STANMORTH, DENIS R
                                               N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-terminal
                                                                                                                          Query Match 3.0
Best Local Similarity 100.
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .. peptide
NO
peptide
NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSE: NIXON & V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
TOPOLOGY: linear
                   HYPOTHETICAL:
FRAGMENT TYPE:
US-08-480-505-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL:
FRAGMENT TYPE:
US-08-480-505-5
    MOLECULE TYPE:
                                                                                                                                                                                                            67 KTKGSG 72
                                                                                                                                                                                                                                1 KTKGSG 6
                                                                                                                                                                                                                                                                                                                                     US-08-480-505-5
                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                   8
```

ö